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H. L. Smith

Twenty-Ninth President of the Southern Economic Association, 1957–1958

The SOUTHERN ECONOMIC JOURNAL

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ADAM SMITH'S THEORY OF ECONOMIC GROWTH—PART II*

JOSEPH J. SPENGLER

Duke University

IV

In the preceding sections I have examined the roles played in Smith's theory of economic development by division of labor, capital accumulation, natural resources, and the state. In the sections making up Part II of this paper I deal with what Smith described the "natural" course of development to be. I treat also of the subsequent evolution of some of the concepts originated or popularized by Smith.

The optimal or natural course of economic development was that which men followed when a system of natural liberty prevailed. This course Smith described in Book III on "the different progress of opulence in different nations." How and why men proposed to deviate from this course, together with the penalties of such deviation, he considered in Book IV.

Having identified four somewhat interrelated sectors for investment—procuring rude produce, manufacturing, transportation, and trade or distribution carried on at home or abroad—, Smith observed that capital accumulation proceeded most rapidly when capital was "employed in the way that affords the greatest revenue to all the inhabitants of the country, as they will thus be enabled to make the greatest savings."[79] Such employments would result when investors in search of the best attainable returns were free to invest as they saw fit. Then self-interest would prompt each to engage in what was most advantageous to him.[80] Then an optimal sequence manifested itself. "According to the natural course of things, therefore, the greater part of the capital of every growing society is, first, directed to agriculture, afterwards to manufactures, and last of all to foreign commerce."[81]

Underneath this sequence Smith found a rationale, based upon the supposition that the immediate objective was augmentation of employment. Until agriculture was fully developed, heavy and continuing investment therein was indicated; for capital thus employed set more laborers to work than did investment in any other employment, and (in modern terms) the output-capital ratio was high since man also had the assistance of (a non-niggardly) "nature." Nonetheless, too little capital was flowing into agriculture; self-interest prompted the investor to put his capital where it yielded the greatest private advantage, and the disposition resulting

* Part I of this article was published in the April 1959 issue of this *Journal*.

[79] *Ibid.*, p. 347; also pp. 341 ff. on "different employments of capital."

[80] *Ibid.*, p. 99. Individual interest led the investor to employ his capital as near home as possible and in a way to produce "the greatest possible value"; capital thus employed was "most advantageous to the society." *Ibid.*, pp. 421–23. Smith was always alert to the economic significance of distance. E. g., see *Lectures*, p. 234.

[81] *Wealth*, p. 360; this order had been in some degree observed in every society "that had any territory." Smith was always concerned with the economic significance of economic change. For example, he noted how, with economic progress, the role of capital increased (e. g., *Lectures*, p. 181) and the relative importance of the components of price underwent modification (*Wealth*, Bk. I, chap. 6). In his account of the evolution of the conduct and the support of military activities, he even identified four economic stages through which various societies had passed: hunting; pastoral; self-sufficient agriculture, together with settled habitation; "civilized," resting upon various combinations of agriculture, commerce, and manufacture (*ibid.*, pp. 659–60). He did not make much use of this theory of stages, however, except to state that, since men had far less leisure in the "civilized" than in the two preceding stages, effective defense was to be had in the "civilized" stage only through the establishment of a standing army (*ibid.*, pp. 659–60). Only in this stage (in which, despite its variegatedness, one finally finds society comparatively secularized and economic life detraditionalized) was continuing economic progress possible. E.g., see Cropsey, *op. cit.*, pp. 59–64; also note 73 above and 137 below.

did not make for the greatest social advantage when competition was imperfect as in Europe.[63] Investment in manufacture, though not as secure as that in agriculture,[64] ranked next after it in number of productive workers a given amount of capital could set in motion and also (apparently) in the magnitude of the output-capital ratio. Next in order came investment in internal transport and distribution, some of which always was necessary to enable agriculture and manufacture to flourish. Unlike the mercantilists Smith considered investment in foreign commerce disadvantageous until a country had developed surpluses of which it must dispose abroad.[65] For capital turned over much faster in domestic than in foreign trade and thus gave rise to more employment. Not until all other employments were full would a country's "surplus" capital "naturally" disgorge itself into the carrying trade. He pointed out, however, that this form of trade was susceptible of vastly more expansion than was domestic or foreign trade, being limited only by the size of that part of the world's surplus produce, intended for sale in foreign markets.[66] "The carrying trade is the natural effect and symptom of great national wealth; but it does not seem to be the natural cause of it."[66] Since countries scarcely ever had enough capital, and since many lacked it even for their agriculture, manufactures, and transportation,[67] it was essential that capital be employed economically; it should not be too hastily invested in external commerce.

Smith argued in effect that the progress of Europe in agriculture and in material well-being in general had been slow because of legally sanctioned and institutionalized departures from "perfect liberty."[68] The towns of Europe should have developed in response to growing surpluses of rural produce as was happening in America. It did not happen so because initially both agriculture and urban activity were subject to discouragement. From this the towns were the first to escape. Townsmen achieved "liberty and independency," military security, protection against heavy tax burdens, and security for their capital and the fruits of their industry. Towns thus early became sanctuaries for capital and craftsmen, and abodes for manufacture, initially of clothing and furniture and later of more varied products. No town became opulent, however, until the time of the Crusades when Italian cities got rich serving as "commissaries" to executors of this "most destructive frenzy that ever befell the European nations." As a result agriculture benefitted; towns afforded a market for

[63] *Ibid.*, pp. 92, 344–45, 347, 355; *Lectures*, pp. 224 ff. When discussing investment in foreign commerce and the carrying trade, Smith objected that capital thus employed turned over very slowly, but he disregarded this in respect of agricultural investment (*Wealth*, p. 349). He remarked that in Europe the return on agricultural investment was no better than that in alternative employments. See *ibid.*, p. 355. Smith must have supposed that, with "much good land still . . . uncultivated" even in Europe (p. 355), and with the tendency of increase in produce to create its own market by stimulating population growth and therewith also the demand for products other than food (pp. 146, 173), the limitedness of the desire of individuals for food (p. 164) would not soon set a limit to the aggregate demand for food. He remarked also the superiority of husbandry to other activities on aesthetic and related grounds (pp. 357–58).

[64] National capital "acquired to any country by commerce and manufactures, is all a very precarious and uncertain possession, till some part of it has been secured and realised in the cultivation and improvement of its lands." See *ibid.*, p. 395, also 359–60; also pp. 392–93, where land is described as a source of security to the better-to-do but not to a young man of small capital.

[65] Even then it would not pay to employ capital in foreign commerce, if superior alternatives existed. Smith pointed particularly to countries with a surplus of raw produce for export and indicated that it might be to their advantage to rely upon foreign capital to move this surplus. See *ibid.*, pp. 359–60.

[66] *Ibid.*, pp. 343, 344, 348–49, 352–54.

[66] *Ibid.*, p. 354. Presumably this activity was the best suited to countries where, as in Holland, the interest rate (the best index of profit) was low (pp. 88, 91–92, 354).

[67] *Ibid.*, pp. 346–47, 348. Smith's treatment of capital allocation, at variance with his treatment of self-interest (p. 99), was criticized by Ricardo (*Principles*, chap. 21).

[68] See *ibid.*, pp. 118–43 on inequalities occasioned by "the policy of Europe" which restricted entry into some employments, subsidized and overdeveloped others, and obstructed the circulation of labor and capital from employment to employment and from place to place.

its produce and capital for its improvement,[59] and they demonstrated the advantageousness of order, good government, liberty, and security. Great proprietors, who, secure behind entail and primogeniture, had done nothing to improve agriculture, were now tempted by urban products; and commonly they either disposed of their lands or leased them to tenants on terms that were or would become advantageous to the latter. Tillage consequently passed under the control of agricultural "improvers," of whom the "principal" were "small proprietors," with "rich and great farmers" next in importance.

> It is thus that through the greater part of Europe the commerce and manufactures of cities, instead of being the effect, have been the cause and occasion of the improvement and cultivation of the country.
>
> This order, however, being contrary to the natural course of things, is necessarily both slow and uncertain.[60]

He contrasted Europe's slow growth with the rapid growth of America where a more nearly optimal sequence was being followed. He indicated, furthermore, that though European agriculturalists now had much greater incentive than when feudalism was in fuller flower, European agriculture still remained variously encumbered by unsatisfactory leases and rents and burdensome taxes, by restraints on domestic and foreign trade in produce and by urban corporate regulations and practices that made the internal terms of trade less favorable to agriculture, and by various policies that were mercantilist in origin or spirit.[61] While Smith opposed policies designed to favor agriculture, he did approve easing somewhat the land-tax burden incident upon the landlord who cultivated "a part of his own land," saying that experimentation and improvement would thereby be encouraged, but he restricted the size of this exempted "part" to what the landlord could himself supervise.[62]

In Book IV Smith attacked mercantilist principles and policies, together with restraints upon economic activities and artificial encouragements to industry and commerce. He also examined critically the views of physiocratic exponents of agrarian capitalism.[63] Smith attributed two principles to the mercantilists: that wealth consisted in gold and silver; and that the governments of countries without mines needed to intervene to make their trade balances favorable and thereby draw in gold or silver. It was policies directed to this end, often after having been contrived by self-interested producers (e.g., merchants, manufacturers), that were inimical to the welfare of consumers and to economic progress generally.[64] Advocates of mercantilist ends and policies favored the use of duties and prohibitions to restrain the importation of goods that might be produced domestically or that came from countries with which an unfavorable balance was held to be particularly "disadvantageous." They favored encouraging exportation by granting bounties or drawbacks to exporters, by securing them preferential treatment in foreign markets through commercial treaties, and by establishing colonies and reserving the markets situated therein for exporters located in the mother country. Such mercantilistic measures violated the system of natural liberty and occasioned departure from the optimal sequence of investment and developmental activities, Smith de-

[59] The desire to better one's condition could partially correct a malallocation of resources. Smith pointed to the accumulation of profits of quasi-monopolistic origin in towns and at the expense of the country. This accumulation finally depressed profits in the towns, with the result that some capital flowed back into the countryside. *Ibid.*, p. 128.

[60] *Ibid.*, p. 392, see also *ibid.*, pp. 384–85, where merchants turned landlords are described as bold improvers.

[61] Smith described the decomposition of large feudal properties and the resultant increase in social mobility as "a revolution of the greatest importance to the public happiness." *Ibid.*, pp. 391–92. For his discussion of the slow rate of progress in Europe, see *ibid.*, pp. 392–96; of land improvers, 363–64, 371, 392; of the rise of towns and their impact on the country, pp. 372–91; of entail, primogeniture, burdens, etc., pp. 124–26, 128, 361–62, 368–72, 392–96, 636–37, 642 ff. See also note 48 above.

[62] *Ibid.*, p. 784. Agriculture was not encouraged by a corn bounty, nor would it be encouraged by restrictions upon manufactures. *Ibid.*, pp. 155, 476, 650–51.

[63] Smith differed with the Physiocrats more on points of theory than on fundamental philosophy. *Ibid.*, Bk. IV, chap. 9.

[64] *Ibid.*, pp. 625–26.

clared. They had retarded and would continue to retard economic growth.

> It is thus that every system which endeavours, either, by extraordinary encouragements, to draw towards a particular species of industry a greater share of the capital of the society than what would naturally go to it; or, by extraordinary restraints, to force from a particular species of industry some share of the capital which otherwise would be employed in it; is in reality subversive of the great purpose which it means to promote. It retards, instead of accelerating, the progress of the society towards real wealth and greatness; and diminishes, instead of increasing, the real value of the annual produce of its land and labour.[95]

For empirical confirmation of his arguments in favor of liberty and natural economic development and against governmental attempts to induce economic growth, Smith pointed both to the experience of Europe with monopolistic restrictionism and objectionable fiscal policies and to that of the colonizing and trading powers. The growth-retarding effects of corporate restrictionism (e.g., long apprenticeship) have already been noted.[96] Spain and Portugal had undergone economic decline, partly because of restrictionist policies pursued at home and in their colonies and partly because of efforts to attract or keep gold and silver.[97] Conditions had improved in France, but not so much as they might have done in the absence of mercantilist policies.[98] Liberal Holland, in contrast, had become the richest country in Europe, in part because of her institutions and the values esteemed by her people. There, as was to be expected in a mercantile state, trade was held in high regard and idleness was condemned;[99] the government was republican, and the legislature was attentive to industry and commerce; and trade, except for that with Holland's Asian colonies, was relatively free of restraints.[100] England, after Holland the richest country in Europe, had been experiencing slow progress for more than two centuries. This might have been anticipated, since she was admirably suited to carry on agriculture and "as well fitted by nature" for commerce and manufactures "as any large country of Europe." England's progress had been less rapid, however, than had been possible, because priority had been assigned to commerce and manufactures instead of to agriculture,[101] and because mercantilist and other policies unfavorable to the most efficient use of England's capital had been pursued.[102]

Smith pointed particularly to the fact that England's North American colonies had flourished more than those of other colonizing countries, even though her colonies were not better endowed with land. He attributed this outcome to a number of circumstances: the institutional equipment of the American colonies was superior; their inhabitants were free to "manage their own affairs their own way"; primogeniture and entail were less prevalent and alienation of land was more frequent; there was less engrossment of uncultivated land; taxes were moderate; the trade monopoly of the mother country was less oppressive, liberty being complete except in respect of foreign trade.[103]

As matters stood, however, it would be better for Britain to give up authority over her colonies, since she had to provide the expenditures made on them, and these were laid out not upon development but upon the support of monopoly which disadvantaged both the colonies and the

[95] *Ibid.*, pp. 650–51; also 577–79. The mercantilist system, together with its policies and their effects, are described in Bk. IV, chaps. 2–8. Smith recognized the infant industry principle, but rejected it, saying that the immediately resulting slowdown of capital formation would offset or more then offset any advantage attendant upon the earlier introduction of the protected manufacture. *Ibid.*, p. 425, also p. 635 on lack of need for protection. See also J. Viner's summary of English mercantilist views on foreign trade in *Studies In the Theory of International Trade*, New York, 1937, chaps. 1–2.

[96] See above, note 88; Smith, *Wealth*, pp. 118–43.

[97] E.g., see *ibid.*, pp. 202–04, 238–39, 395, 399–400, 404, 478–80, 529–31, 534–36, 538–39, 543, 552–53, 575–76, 578, 591.

[98] *Ibid.*, pp. 89–91, 202, 394–95, 434, 440–42, 463, 542–43, 554, 557, 627–28, 687–89, 807, 837, 852, 881.

[99] *Ibid.*, pp. 96–97; the interest rate was too low to permit many to live as rentiers. In France trade was held in low esteem, but not in Britain (p. 91).

[100] *Ibid.*, pp. 91, 96, 150, 158, 202, 351–54, 393, 430, 433, 464, 480, 512, 595–97, 600–01, 632, 641–42, 826–27, 857.

[101] *Ibid.*, pp. 89, 202, 327, 393–94. Smith did not deal explicitly with the effect of variation in country size, but he did say a state could be too large; classic Rome had been so (*ibid.*, p. 665).

[102] *Ibid.*, pp. 328–29, 462–63, 515–16, 561–75, 593–94, 600–02, 626.

[103] *Ibid.*, pp. 392–93, 534, 538–44, 547–52.

mother country. Under the existing arrangement the colonies did not contribute enough tax revenue to make them advantageous to Britain, and they were unwilling to do so.[104] If Britain "voluntarily" gave up authority over her colonies, she would be freed of the expense of their "peace establishment" and would be able to enter into a commercial treaty with them to insure free trade between the two parties. Alternatively, Britain might convert her "project of an empire" into an acceptable, federated organization in which America would be an equal partner with Britain.[105] Given freedom from uneconomic restraints, such arrangement would benefit both parties, and particularly the North American colonies, since within a century they would outstrip Britain in economic importance. Then the "seat of empire" might be transferred to North America.[106]

Smith did not expect that Britain would give up authority over the colonies any more than he expected that a system of natural liberty would come into being. It was inevitable that bureaucrats and monopolists and other interested parties would oppose both policies, howsoever great might be the probable increase in the welfare of England and her colonies.[107]

> To expect, indeed, that the freedom of trade should ever be entirely restored in Great Britain, is as absurd as to expect that an Oceana or Utopia should ever be established in it. Not only the prejudices of the public, but what is much more unconquerable, the private interests of many individuals, irresistably oppose it.[108]

V

The two remaining sections of this paper have to do with whether Smith's theory of economic development is reducible to terms of a model, and with the place of his theory in the history of developmental theory.

Is Smith's theory of economic development susceptible of reduction to terms of a quantitative model? Is such treatment indicated? The answer to each question is: after a fashion, yes. Such attempts can bring out implicit assumptions of which Smith may not have been aware, and might not have accepted—assumptions having to do with what is constant and what is variable, with how variables are functionally related, with what time lags are present, etc. Such attempts also exact a price, when the student relies exclusively upon them for his understanding of what Smith himself perceived in the world about him, of Smith's handling of his perceptions, and of his interpretative responses to the highly variegated world in which he found himself. They tend also to make too many conditions constant, and to describe functional relationships as technological or relatively invariant even though Smith stressed the behavioral and (hence) variable character of important functional relationships. One might add also that Smith himself apparently objected to the use of models which were complex, rigid, or highly specific.[109]

By way of illustration we may turn to Thweatt's neat diagrammatic exposition of Lowe's verbalized model.[110] Lowe's model suggests that

[104] *Ibid.*, pp. 580–83, 899–900.

[105] *Ibid.*, pp. 581–82, 586–90, 899–900.

[106] *Ibid.*, pp. 70, 392–93, 590. See *ibid.*, p. 590, where he says: "Such has hitherto been the rapid progress of that country in wealth, population and improvement, that in the course of little more than a century, perhaps, the produce of American might exceed that of British taxation. The seat of empire would then naturally remove itself to that part of the empire which contributed most to the general defence and support of the whole."

[107] *Ibid.*, pp. 438, 582.

[108] *Ibid.*, pp. 437–38.

[109] When a metaphysical doctrine was reduced to a "scholastic" system, it was deprived of "whatever degree of good sense" it had originally contained. See *Theory of Moral Sentiments*, pp. 425–26; also *Essays*, p. 352, where he suggests that complex explanatory systems tend to give place to simpler systems, sometimes built around a single connecting principle.

[110] See W. O. Thweatt, "A Diagrammatic Presentation of Adam Smith's Growth Model," *Social Research*, XXIV, 1957, pp. 227–30; the diagram referred to below may be consulted in Thweatt's paper. This model is based on A. Lowe's verbalized model, described in "The Classical Theory of Economic Growth," *ibid.*, XXI, 1954, pp. 132–41. Lowe supposes what Smith hardly dared hope for, a fully operative system of natural liberty. See also B. S. Kierstead, *op. cit.*, pp. 69–77; A. A. Young, "Increasing Returns and Economic Progress," *Economic Journal*, XXXVIII, 1928, pp. 527–42; G. J. Stigler, "The Division of Labor Is Limited by the Extent of the Market," *Journal of Political Economy*, LIX, 1951, pp. 185–93. E. McKinley does not deal with Smith in his "The Problem of 'Under-

Smith's interpreters should concentrate on division of labor and the growth of labor and capital, and meanwhile hold constant the behavioral tendencies underlying procreation, capital accumulation, and the institutional system, together with the stock of land and natural resources available. Thweatt begins with an initial situation in which demand for labor D_1 intersects the short-run supply of labor S_1 at wage w_1, and associated therewith is a total effective demand T_1 (which depends on wages and the labor supply) that permits a profit P_1 and consequently a capital accumulation i_1. As a result of accumulation i_1 the market is enlarged by somewhat more than i_1 alone would occasion, since division of labor and (hence) technological efficiency (which is not labor-displacing) also increase as the market expands in response to i_1. The demand for labor therefore shifts upward, D_2 replacing D_1 and intersecting S_1 (which is unchanged as yet because the population of working age still remains unchanged) at a higher but temporary wage w_t. In consequence population grows and the short-run supply of labor shifts to the right, S_2 replacing S_1 and intersecting D_2 at wage w_2 which is somewhat lower than w_t but higher than w_1. With w_2 is associated a new and greater total effective demand T_2; this gives rise to a profit $P_2 > P_1$ and hence to capital accumulation $i_2 > i_1$. And so on.

This system continues to expand because, unlike Ricardo's, it is not subject to a constraint in the form of diminishing returns,[111] and because the expansion made possible by division of labor permits profits, capital, wages, wage rates, and markets to expand sufficiently to allow yet further extension of division of labor. And so on. "The decisive variable" in Smith's system, "the true dynamic force," is, Lowe remarks, "division of labor" in the broader sense of "technical progress." Yet, as Lowe points out, increase in the effectiveness of this force depends upon the expansion of the economic system itself—upon extension of the market which depends in turn upon growth of population and average income, principally upon the former according to Lowe's interpretation of Smith.[112] Expansion comes to a halt in the Smithian model and a terminal stationary state sets in, Lowe infers, when "full utilization of the natural environment prevents further expansion of aggregate and per capita income."[113]

A number of difficulties attend any attempt to reduce Smith's theory of growth to model terms. First, the level of output achieved in an economy is very much conditioned by the kind of socio-political system in effect and the degree to which it allows men to express their propensities. There was much more idleness in feudal and quasi-feudal societies than in mercantile societies or in an English type of society;[114] and the disposition to put forth effort and produce is greater when it stands to be liberally rewarded then when this is not so, be the reward wages or profits. Similarly, capital accumulation proceeds much more slowly when a government is powerful and prodigal, and when undertakers and lenders are not free to invest their capital as they see fit.[115] Population growth, market expansion, and extension of division of labor are affected accordingly.

Second, Smith's discussion does not suggest that the functional relation between the growth of population and that of wages or income is necessarily rigid. At one extreme were the pros-

development' in the English Classical School," *Quarterly Journal of Economics*, LXIX, 1955, pp. 235–52; nor does J. A. Schumpeter in his *History of Economic Analysis*, New York, 1954.

[111] E.g., see W. J. Baumol, *Economic Dynamics*, New York, 1951, pp. 17–19; cf. Lowe, *op. cit.*, pp. 141 ff.

[112] *Op. cit.*, pp. 135–39. Kierstead (*op. cit.*, pp. 74, 76–77) apparently believes that Smith did not assign so heavy a role to the expansive influence of population growth as Lowe supposes him to do. In one place (*Wealth*, p. 164) Smith has division of labor grow in consequence of an increase in population caused by an increase in food.

[113] *Op. cit.*, p. 139. Smith, of course, looked upon nature as beneficent and hospitable (*Wealth*, pp. 344–45), whereas Ricardo (*Principles*, secs. 28, 45) noted its niggardliness. Cf. Myint, "The Welfare Significance. . . ," *loc. cit.*, pp. 24–26. Smith's stationary state is described as "terminal" because it is a real and empirical end-result, given certain conditions, and not an analytical tool as was J. B. Clark's stationary state.

[114] Smith, *Wealth*, pp. 319, 321.

[115] Smith notes the importance of a country's socio-political system when he describes China as having "acquired that full complement of riches which the nature of its laws and institutions permits it to acquire." See *ibid.*, p. 71. Holland's "republican form of government" was "the principal support" of its "grandeur." *Ibid.*, pp. 857–58.

perous "new colonies" in which population was advancing 3–3.5 per cent per year. Here population growth was economically motivated. When land is plentiful and food very easily had, the "value" of the labor of children "greatly overpays their maintenance."[116] At the other extreme was a stationary state like China, with "its full complement of riches" and a population which, while nongrowing, included somewhat more workers than could be supported out of the "funds destined for the payment of wages." In such a "dull" state life was "hard" and mortality was high; Smith must therefore have supposed that an increase in the subsistence available to the masses would reduce mortality and increase numbers.[117] Smith's comments on Europe, whose population supposedly had long grown only about one-eighth of one per cent per year, do not suggest that, under all circumstances, increases in wages (income) need conduce to increases in population growth by diminishing infant and child mortality in the "inferior ranks" and by augmenting the number of married.[118] For, though food is described as the principal population-limiting factor, the argument that there is no limit to the rate at which one may consume housing, dress, equipage, etc., suggests the possibility that desire for these items might come to check population as incomes rose in countries where land was scarce.[119] How much of a lag there was between an increase in the rate of population growth and an increase in that of the labor supply is not noted, nor whether in this interval the standard of life of workers might change.[120]

Third, while Smith carefully described the role of capital formation in his growth model, he did not quantify it. He indicated rather clearly that an increase in the employed labor force entailed an increase in the capital-labor ratio, though not necessarily an increase in the capital-output ratio.[121] But he did not specify the functional connection between rate of return to capital and rate of capital accumulation, except to suggest that the latter was positively correlated with the former. He expected the rate of profit to fall and hence eventually also the rate of capital formation, since, in the absence of entry into the carrying trade or of the accession of new trades or territories, an economy eventually would approximate a stationary state in which wages and profits were low and capital had ceased to grow.[122]

Fourth, it is not clear to what extent Smith looked upon capital as labor-displacing, or in what measure he considered population growth essential to extension of the market. It is rea-

[116] *Ibid.*, pp. 70, 532. In these circumstances "a numerous family of children, instead of being a burden is a source of opulence and prosperity to the parents. The labour of each child, before it can leave their house, is computed to be worth a hundred pounds clear gain to them." The "value of children is the greatest of all encouragements to marriage." A young widow with four or five children, who in Europe stood "little chance for a second husband," in North America is "frequently courted as a sort of fortune." See *ibid.*, pp. 70–71.

[117] *Ibid.*, pp. 71-73, 81, 94-95, 189, 205–06, 249. While he did not note directly that marriage tended to be earlier in China than in the West, he implied this when he said that marriage was encouraged there "by the liberty of destroying" children (*ibid.*, p. 72). Bengal was described as a "melancholy" declining state in which life was "miserable." *Ibid.*, pp. 73, 81.

[118] *Ibid.*, pp. 70, 79–81, 146, 163, 532.

[119] *Ibid.*, pp. 163–64. On p. 80, however, he declares that "the demand for men . . . necessarily regulates the production of men" and "determines the state of propagation in all the countries of the world"; but he does not specify the supply price of men, or indicate whether or not it rises, because men become habituated to an ever rising standard of life. The role of demand is stressed by S. H. Coontz, *Population Theories and the Economic Interpretation*, London, 1957.

[120] Children began to enter employment around the age of eight. *Wealth*, pp. 15–16.

[121] While it was essential to increase wage-goods only enough to offset the increase in labor, it was necessary to increase materials and tools in greater measure, since an increase in division of labor consequent upon an increase in the number of workers entailed some increase in the roundaboutness of production. But this same increase in division of labor augmented output per worker, probably by enough to increase the output-capital ratio. Smith, of course, does not use these terms. See *ibid.*, pp. 259–61, also pp. 64 ff., 69–70, 189–90, 249, 314 ff.

[122] Until such state came into being wages and profits tended to move inversely, though both were high in new colonies. See *ibid.*, pp. 87–97. Profits had been greatly raised in Britain by the accession of the colonies in North America and the West Indies and the trade therewith associated (*ibid.*, pp. 93–94).

sonable to infer, however, that he looked upon capital in the aggregate as complementary to labor in the aggregate, even though in particular instances he supposed that division of labor consequent upon capital accumulation might displace a particular type of labor; and that, given his very low estimate of the rate of growth of Europe's population, together with his notion of expanding average consumption, he could and did attribute a considerable part of the extension of the European market to increase in average income.[133]

Fifth, Smith did not look upon a shortage of land and resources as an insuperable obstacle to further development of any particular country, since it could engage in foreign and carrying trade as did Holland. The alternative seems to have been a stationary state after the Chinese model, though this is not a necessary outcome, since Smith's premises could be made to support a Ricardian type of stationary state.[134]

VI

In this section the place occupied by Smith's theory of development in the history of the theory of growth is examined. It is reviewed under eight headings, of the sort encountered in contemporary writings on economic development: (e.g., production, consumption, and incentives, capital formation, monetary policy, population, international economic relations, etc.).

(1) *Production.* In Smith's system growth of output depends immediately upon the growth of labor and capital, upon the manner in which capital and labor are employed, and upon the extension of division of labor. His exposition was greatly handicapped, however, by his lack of anything more than an implicit productivity theory wherewith to assess the impact of factor growth. Labor's role is essentially passive in that its employment is conditioned by the amount and the disposition of circulating capital, and in that output per worker is conditioned by fixed capital and/or land per worker. Circulating capital serves to increase a nation's "annual produce" only if it increases the "productive" employment of that nation's workers; and it realizes its potential influence fully only if this capital sets labor to work in those branches of the economy in which its productivity is relatively greatest. Smith supposed that this potential tends to be fully realized when users of capital are free to dispose of it as they see best, even though, being unequipped with a marginal productivity approach, he elsewhere ordered fields for investment in a way that would hardly maximize output. Smith's emphasis upon circulating capital and the production of tangibles, together with his comparative neglect of fixed capital, remained substantially in effect during the lifetime of the classical school. His contribution consisted in his making explicit the important role played by capital in economic development.

Despite Smith's stress upon the manner in which capital was utilized and his recognition of the importance of both the human factor and activity specialization, he did not play up the role of the entrepreneur,[135] nor did he greatly appreciate the intra-firm economies of scale and the economic-development powers that might accrue to those making use of the corporate form of enterprise. Smith's undertaker strikes one as a prudent, cautious, not overly imaginative fellow, who adjusts to circumstances rather than bring about their modification. There is in him little of the innovator whom present-day growth theory glorifies. One does not, therefore, find Smith isolating and analyzing the behavior of a minority of decision-makers by whom direction is given to the economy, and through whom society averts the economic catalepsy that would ensue if equilibrium were attained. In Smith's system, therefore, economic change is primarily the product of a vast number of minor changes introduced by a multitude of comparatively small undertakers. It is not essentially the result of activity on the part of a minority

[133] It is a matter of degree, and within limits, since beyond a point, his arguments suggests, increase in population is essential to further extension of the market. But cf. Lowe's somewhat different interpretation (*op. cit.*, pp. 136–37).

[134] On Holland see *ibid.*, pp. 91–92, 96, 190, 202, 464, 632, 641–42, 857–58. On China see *ibid.*, pp. 71–73, 80, 189, 205–06; also pp. 360, 462, where Smith says China does not engage in ocean shipping.

[135] The importance of the role of the entrepreneur had been recognized by Cantillon and his disciples, by some Physiocrats, and by others. See B. F. Hoselitz, "The Early History of Entrepreneurial Theory," *Explorations In Economic History*, III, 1950–51, pp. 193–220.

of creative leaders.[126] This estimation of enterprise dominated English political economy for more than a century after he enunciated it.[127]

Land was of great importance in Smith's theory of development. He considered agriculture the most important industry, and the one whose output per unit of labor input long tended to be relatively favorable under conditions of free competition. At the same time it apparently was the limitedness of the supply of land that underlay his inference that an economy's state tended in the end to become stationary.[128] He attached far less importance to other natural agents, probably because he lived at a time when most of the materials subjected to transformation were organic in character. Accordingly, it was the availability of food rather than that of raw materials which he dwelt upon most when discussing location and conveyance.

Of greatest significance in Smith's theory of development was division of labor, a dynamic force whose extension stimulated or gave release to invention and various other forces which reduce input (especially of labor) per unit of output. It is this force and its limitations, more than any other treated by Smith, that continued to command the attention of economists, even in the present century. Three decades ago A. A. Young concluded that, when division of labor and extension of the market proceed within an economy made up of highly interrelated activities, division of labor becomes, as Smith implied, essentially a function of itself. It is governed by "buying power" which depends upon average income and numbers; increments in "buying power" enlarge division of labor which enlargement further expands buying power. This expansive process is compatible with nongrowth of population, though, under various conditions, it operates to increase per capita income even faster when population is growing. The progressive and cumulative changes associated with increasing division of labor thus are long capable of overcoming obstacles which might otherwise check the expansive process. Entrepreneurs in particular are sufficiently animated by the prospect of a continually growing market to keep the expansive process in motion.[129] Smith himself did not go so far as Young; he recognized the existence of a barrier to a nation's continuing expansion, namely, the limitedness of its available land. Because this barrier could rarely if ever be surmounted, the eventual advent of a stationary state, though not so happy a one as J. S. Mill's, was to be anticipated.

In recent years economists have continued to make use of Smith's principle when discussing economic development. Thus, out of Young's interpretation a doctrine of balanced growth has been evolved.[130] Out of Stigler's analysis of division of labor, considered as "a fundamental principle of economic organization," has emerged both a conclusion to which Smith implicitly subscribed, namely, that division of labor does not

[126] Smith did observe that merchants were bolder undertakers than were country gentlemen and hence more given to improving agricultural operations. *Ibid.*, pp. 384–85. Smith does not concern himself with whether manufacturers tend to come from the mercantile class, because merchants were "commonly ambitious of becoming country gentlemen" (*ibid.*, p. 383), and (probably) because in the pre-industrial-revolution period in which his ideas were formed the origin of industrial leaders was of little speculative concern. See note 137.

[127] E.g., Walter Bagehot, who wrote that "adventure is the life of commerce" and that "the capitalist is the motive power in modern production," overlooked the role of innovation and endorsed Smith's view that the joint-stock company form was not adaptable to firms whose operations were non-routine in character. See *Works*, edited by F. Morgan, V, Hartford, 1889, pp. 151, 158, 293–95.

[128] Ricardo (*Principles*, Gonner ed., secs. 44, 99, and notes) criticized Smith for failing to attribute the fall of profits to the rise in the marginal cost of produce. But see *Wealth*, pp. 92–93. Ricardo also implicitly criticized Smith (*op. cit.*, sec. 123) for confusing the marginal and the average output-labor ratio when he asserted that usually a given input of agricultural investment set more labor in motion than did a corresponding input of non-agricultural investment. Cf. G. L. S. Tucker, "The Origin of Ricardo's Theory of Profits," *Economica*, XXI, 1954, pp. 320–333.

[129] *Op. cit.*, esp. pp. 533–37, 539. Young went so far as to suggest in private discussion that Britain could do with a population of 100 millions, a suggestion Colin Clark describes as "too much of a good thing" (*The Conditions of Economic Progress*, 3rd ed., London, 1957, p. 345). See also Myint, "The Welfare Significance. . . .," *loc. cit.*, pp. 20 ff.

[130] E.g., see M. Fleming, "External Economies And The Doctrine Of Balanced Growth," *Economic Journal*, LVV, 1955, pp. 241–56; also H. W. Arndt, "External Economies in Economic Growth," *Economic Record*, XXXI, 1955, pp. 192–214.

tend to eventuate in monopoly, and an inference which he probably endorsed, namely, that one cannot usually transfer to a country with relatively little division labor methods of production peculiar to countries with highly developed division of labor.[131]

(2) *Consumption*. While Smith noted social and other obstacles to the expansion of consumption in rude societies, he found no such limits to its expansion in civilized commercial societies. There societal pressures made for the expansion and multiplication of wants, and self-interest prompted receivers of money income to spend or invest it promptly. Smith therefore took for granted the validity, in a civilized society, of a principle later defined as Say's Law, together with its supposed corollary, that living standards tend to expand sufficiently to prompt workers to continue their supply of effort. In part for this reason, and because he took internal diffusion of economic prosperity for granted, he attached great weight to the expansion of the internal market.

(3) *Capital Formation*. Because capital governed employment, conditioned average productivity, and set limits to the extension of division of labor, Smith deemed its accumulation very essential to development. Yet he did not deal effectively with the sources of additional capital, even though he indicated social conditions requisite in order that self-interest might prompt men to save. Furthermore, his great and almost exclusive emphasis upon "parsimony" may have led him to underestimate both the capital-supplying power of "surpluses" and the contribution that increments in productive power might easily make to a nation's capital. It remained for Ricardo to identify explicitly the sources whence increments to a nation's capital might be expected to flow. Smith's line of argument merely pointed to these sources.

(4) *Monetary Policy*. While Smith pointed to certain economies that banks might make possible, he had no room for monetary policy, nor did he give attention to the trade cycle. In civilized societies money continued to circulate. There did not exist, as Bentham was later to suggest, unemployed persons who might be set to work through reflationary or somewhat inflationary increases in the supply of money. Increases in this supply could not, as mercantilist and monetary speculators had held, result in increases in employment, industry, output, and capital formation. Smith's view persisted so long as classical opinion held sway, though in practice it was often honored in the breach.

(5) *Population*. Population growth plays an ambiguous role in Smith's system. It tends to take place so long as the annual produce and circulating capital grow, since population expands in response to the increase of wage goods, the main component of circulating capital. It also tends to be accompanied, at least within limits, by extension of division of labor, with the result, that per capita output rises. But limits exist to this extension; shortage of land and/or a cessation of capital formation develops, and the economy becomes essentially stationary.

(6) *International Economic Movements*. Smith noted certain advantages of international trade, above all extension of division of labor as a result of the expansion of foreign sales. Moreover, he anticipated the development of an Atlantic English-speaking Community, or meta-state, of the sort later envisaged by J. S. Mill, within which trade would be free. But he did not, as did Mill, suppose that a continual flow of labor and capital from the United Kingdom to the less developed parts of this community would alleviate population pressure and sustain profits.

(7) *The State*. Unlike most modern writers on economic growth, Smith assigned only a minor direct developmental role to the state, restricting its major contribution to the maintenance of a milieu suitable for the uninhibited conduct of private enterprise. He pointed also to the evils that attended state intervention, to the capacity of governments for waste and for uninterrupted service of special interests, to the tendency of governments to misdirect and corrupt various private interests, to the shortness of governmental time horizons and, in general, to the socially unsalutary guidance given self-interest by governmental interveners. He found the "infra-structure" relatively less important than do modern writers and susceptible, in considerable measure, of being constructed under private auspices. Private entrepreneurs animated by self-interest and under the governance of competition were more competent and efficient than were public entrepreneurs. Accordingly, although Smith was disposed to approve

[131] Stigler, *op. cit.*; also F. Lavington, "Technical Influences on Vertical Integration," *Economica*, VII, 1927, pp. 27–35.

the state's undertaking whatever important tasks private enterprise could not carry out economically or effectively, he did not find many which answered to this description. Moreover, he supposed that, as a rule, the transformation of inputs into output could be accomplished more efficiently by private than by public entrepreneurs even when the output was sought by the state or intended for its purchase and use. Smith's view persisted, albeit with some modification, at least until late in the nineteenth century.[132]

(8) *Strategic Class.* Smith anticipated the modern view that economic development is most likely to proceed when a society's middle ranks are adequately peopled, and when there exists a sufficiently large class whose members stand to benefit from such development. In Smith's system it was the middle and the lower classes that stood to benefit most and it was from these classes that the executors of salutary change must come.[133] He observed, however, that, while the interests of the landowning and laboring classes always concurred with the public interest, that of the boldest and most enterprising order, namely, the merchants and master manufacturers, might not so concur. It would not concur if this order's interests were supported by competition-restricting legislation, but it would concur if simple competition was allowed to rule.[134]

(9) *Ideal Society.* Smith did not attempt to describe carefully the characteristics and institutions of an ideal society, or even to enumerate the preconditions of its emergence and progress. But he did remark, as had Hume, the many beneficial effects of the rise of commerce and manufacturers;[135] and he noted that considerable economic growth could be attained only in an economy administered largely by private enterprise within the context of an orderly society that was essentially free of ecclesiastical or central-governmental dominance. Within this society, institutions and customs would be such as to give free play to the universal desire of man to better his condition, unrestrained by the classical virtues but subject to the constraints of competition and the regulative canons of justice, contract, and reciprocity. Comparatively full scope would be given to the principle that, as a rule, each member of such society is able to look after his own economic interests. Political power would be largely in the hands of successful individuals of lower- and middle-class origins. Economic support would be derived from commerce and manufacture as well as from agriculture, since normally a society founded solely on agriculture was not progressive. Many individuals would be comparatively mobile. There could exist no overriding end, or set of ends, that men were under collective pressure to realize. Instead ends would be variegated and generally susceptible of pursuit; and major attention would be given, not to the realization of ends as such, but to the maintenance of social mechanisms whereby heterogeneous ends of diverse individuals might be equilibrated. The sort of society Smith had in mind resembled that found in England, in Holland, and in the American colonies; it could be fully realized in the New World. This society would continue to be marked by various imperfections, yet these were unlikely to render it dangerously unstable and disorderly and thereby seriously retard its economic growth.[136]

(10) *The Future.* Smith subscribed to the eighteenth century belief in social progress,

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[132] E.g., see my "The Problem Of Order In Economic Affairs," *Southern Economic Journal*, XV, 1948, pp. 14–22.

[133] "In the middling and inferior stations of life, the road to virtue and that to fortune, to such fortune, at least, as men in such stations can reasonably expect to acquire, are, happily, in most cases very nearly the same." Ability, when "joined to prudent, just, firm, and temperate conduct, can very seldom fail of success." See *Theory of Moral Sentiments*, p. 86; also *ibid.*, p. 78, where he says that governmental offices, high and low, can be effectively filled only by able and industrious men "who were educated in the middle and inferior ranks of life," since only in these are the requisite "virtues" encountered. Even so Smith endorsed the Stoic opinion that, "between one permanent situation and another, there was, with regard to real happiness, no essential difference." *Ibid.*, p. 209.

[134] *Wealth*, pp. 248–50, 384–85, also 98, 128, 429, 438, 460. Smith took it for granted that all who could would seek monopolistic advantages. He noted the "stupidity" of many in the "inferior ranks" and the imperviousness of proprietors to their own interests. See *ibid.*, pp. 249, 739–40.

[135] *Ibid.*, pp. 385, 390; *Lectures*, pp. 253–54. Disadvantages were also noted. *Ibid.*, pp. 255–59; *Wealth*, pp. 734–40.

[136] Various of the matters dealt with in this paragraph are treated by Cropsey. See *op. cit.*, pp. 49, 52, 55, 63, 64, 68–72, 79–81, 85–86, 95.

though he was more aware of obstacles to be overcome than were some exponents of this belief and less alert to innovation's impact.[137]

One might elongate and elaborate this list, but it is unnecessary. The list suggests that Smith recognized many of the determinants of growth stressed by present-day writers, even though he was imprecise and sometimes dealt loosely with the interrelations of these determinants.

[137] See G. B. Strong, *Adam Smith And The Eighteenth Century Concept Of Social Progress* (in University of Chicago Dissertation Collection, XIX, No. 6), Chicago, 1932; also J. P. Henderson, "The Macro and Micro Aspects of *The Wealth of Nations*," *Southern Economic Journal*, XXI, 1954, pp. 27 ff. On Smith's failure to appreciate the significance of innovations underway in technology and business organizations, see R. Koebner, "Adam Smith and the Industrial Revolution," *Economic History Review*, XI, 1959, pp. 381–91. Erratum: Insert "transport" after the word "water" in line 29 on p. 402 of Part I of this article.

TOWARD AN INTEGRATION OF WAGE THEORY

ALFRED KUHN

University of Cincinnati

The Problem and the Proposed Framework

I

The recent literature on wage determination is replete with pronouncements that wage theory is in a rather unsatisfactory state. Although several weaknesses are cited, the dominant diagnosis is dual personality. Reder points to the apparent usefulness of the competitive model in explaining long run, general-level phenomena, while wage boards and bargainers want information as to the short run and the explicit.[1] Pierson laments "the gap which has come to exist between deductive and inductive wage analysis."[2] Reynolds hopes for "a judicious restatement of the relative roles and significance of ... the 'economic' or 'competitive' forces ... and the institutional pressures."[3] And the present author has elsewhere separated the approximate from the precise determination of wages.[4] In general the inductive approach concentrates on the structures, goals, and power configurations of unions and managements, the personalities and histories of collective bargaining, the non-economic motivations of workers in the labor market, legislation, the size of bargaining units, and the like. The deductive approach concentrates on the competitive model as its working base, and gives major attention to the conditions of supply and demand in labor markets. Whether expressed as long run vs. short run, deductive vs. inductive, "economic" vs. institutional, or approximate vs. precise, the theme of schizophrenia persists—even though many particular individuals are thoroughly conversant with both approaches.

Reynolds has concluded that the "task of synthesis and integration remains to be performed,"[5] and Reder feels that "Recent attempts to put some sort of order into this complex process are praiseworthy if not (thus far) too successful."[6] The purpose of the present paper is to suggest a possible technique for joining these two facets of wage theory into an essentially unitary framework. The proposed technique is to orient our thinking around a frequency distribution of wage rates instead of around the conventional concept of "*the* wage." The "wage" here considered is the real wage for a particular type of labor (e.g., fork lift truck operators, or grade A machinists) in a particular labor market area (e.g., Detroit, Atlanta). A "particular wage" is that wage (as defined) paid by a particular firm or decision-making unit.

The most obvious point of conflict between the two approaches is that the competitive marginal model prescribes a single rate for such labor throughout the market, whereas inductive studies persistently show wide ranges of inequality. That is, wages in fact usually fall into a frequency distribution roughly resembling a normal curve. Equality, when it does occur, is usually attributable to some clear institutional force such as collective bargaining.

Restated, the heart of the present proposal is that the marginal model be abandoned in favor of the frequency distribution as the central focus of wage study. In the proposed rearrangement both marginal and institutional explanations are retained in full scope. But neither is made the basis of the analytical structure. The structure instead consists of the frequency distribution, and of the questions and answers which derive from it. This structure, it seems to the author, is capable of fitting the whole gamut of both

[1] Melvin W. Reder, "Wage Determination in Theory and Practice," in Neil W. Chamberlain and others (eds.), *A Decade of Industrial Relations Research* (New York: Harper & Brothers, 1958), p. 85.

[2] Frank C. Pierson, "An Evaluation of Wage Theory," in George W. Taylor and Frank C. Pierson (eds.), *New Concepts in Wage Determination* (New York: McGraw-Hill, 1957), p. 3.

[3] Lloyd G. Reynolds, "The State of Wage Theory," *Annual Proceedings of the Industrial Relations Research Association, 1953* (Madison, Wisconsin, 1954), p. 240.

[4] Alfred Kuhn, *Labor: Institutions and Economics* (New York: Rinehart, 1956), Chap. 14.

[5] Reynolds, *op. cit.*, p. 240.

[6] Reder, *op. cit.*, p. 85.

marginal and institutional explanations together into a rational, non-conflicting, essentially unitary explanation.

II

More explicitly, the three major questions to be asked about the wage distribution are:

1. What determines the mean level of the distribution? (The median, mode, or other measure of level can, of course, be studied if and when it seems more appropriate.)

2. What determines the degree of dispersion around the mean? (This paper will discuss only the overall width of the range. Other measures of dispersion can also be studied. But for reasons which will appear below, they will probably be of greater significance if studied under Question 3.)

3. What determines the position of any particular wage within the distribution, or any skewness or other non-normality?

Drawing broadly on the literature of the past decade, the following hypotheses may be ventured as the respective answers.

Hypothesis 1: That the approximate value of the mean is determined by the supply of and demand for the particular type of labor in question, according to forces described in the marginal productivity theory (at least as hereinafter modified), while the precise value of the mean is determined by either institutional or fortuitous forces.

Hypothesis 2: That the range of dispersion is a function of imperfections in the supply of labor. (By corollary, the range is also therefore a measure of the degree of imperfection.)

Hypothesis 3: That the position of any particular wage within the distribution, and consequently of any clustering or skewness, is attributable primarily to competitive conditions in the product market; secondarily to such institutional factors as collective bargaining and managerial policy, and thirdly and fourthly to cost structure and to changes in the value productivity of labor.

Although these hypotheses may have some value in their own right, their purpose here is merely to illustrate the importance of the wage distribution, rather than the wage level, as the focal point of wage theory.

This orientation necessarily utilizes both marginal and institutional reasoning, since neither alone is capable of answering all three questions. By its very nature marginalism cannot explain why or by what amounts particular wages deviate from market averages, or how the internal structure of unions may affect their wage policies. Hence institutional hypotheses are necessarily utilized in answering some aspects of questions (2) and (3). And while the institutionalists have done yeoman service in pointing up the dramatic inequalities in the labor market, and the very considerable freedom of decision-makers to deviate from market rates, they have not to the best of the author's knowledge offered any remotely tenable explanation of either the general level from which decision-makers flaunt their deviations, or the reasons why the deviations are not 50 per cent smaller or 500 per cent greater than they are. Hence the main part of the answer to question (1) and some possible parts of the other answers must apparently lean heavily on the competitive model.

III

Several aspects of the relationship between this approach and marginalism should be noted. Marginal terminology and concepts are retained in classifying wage forces as marginal and non-marginal, perfect or imperfect, etc. This is a tactic of sheer desperation, there being no really satisfactory system available. It reflects no predisposition in favor of marginal over non-marginal explanations.

To the extent that marginal analysis (rather than mere marginal vocabulary) is utilized below, the particular weaknesses resulting from its unrealistic simplifying assumptions are removed by eliminating the assumptions. This move is feasible because the simplifying assumptions are necessary only in order to make the marginal system determinate, and determinacy is not required of the marginal portions of the present analysis.

In this connection it is important to recall that the nature and direction of the forces described in marginal theory are the same whether the conditions are perfect or not. For example, the assertion that profit will be greatest at the point where marginal product and wages are equal is a mathematical necessity, not a simplifying assumption. The pressure on a business firm to work somewhere in the neighborhood of this point does not necessarily cease if the

computations are inexact or the motives impure. On the supply side it is a truism that workers can raise their wages by moving from low-wage to high-wage firms, and it follows by deduction that such motion, even if highly imperfect, will set limits on the range of inequality that a particular market will tolerate. In brief, we must be careful not to equate imperfection with impotence. In consequence, where marginal thinking appears in the present framework, labor, management, and other forces affecting wages are not assumed to be any more mobile, divisible, homogeneous, or economically motivated than the facts show them actually to be. It is high time that wage theory incorporate not only such imperfections as oligopoly, kinked demand curves, and backward sloping supply curves, but also such potent imperfections as ignorance and non-economic motivation.

The marginal analysis utilized here also rigorously separates the two questions: (1) whether the wage and the marginal net revenue product of labor are equal, or nearly so, within any particular firm, and (2) whether wages are equal, or nearly so, among different firms in the same labor market. Fuller recognition that either of these conditions may exist without the other may do much to bridge the gap between the inductive and deductive approaches to wages.[7]

SOME CONCEPTUAL PROBLEMS OF APPLYING THE FRAMEWORK

No attempt is here made to defend the three hypotheses; their inclusion is intended solely to demonstrate the nature of the approach. However, some fundamental questions of definition and classification do require discussion. It should be noted that these particular hypotheses reflect the kind of labor markets prevalent in the United States; the more highly structured markets of some other nations might require different emphasis. For convenience each hypothesis will be repeated below.

Hypothesis 1: That the approximate value of the mean of the distribution is determined by the supply of and demand for the particular type of labor in question, according to forces described in the marginal productivity theory as herein modified; while the precise value of the mean is determined by either institutional forces or fortuitous events.

The marginal concept here implied is the marginal net revenue product of labor (MNRP), described elsewhere by Due[8] or by the author.[9] It refers to the additonal net income contributed to an employer by an additional unit of labor, computed after all other costs associated with that unit have been deducted.

The phrase "as herein modified" refers mainly to (1) the admission of serious imperfections into the marginal system, in either labor or product markets, and (2) recognition that wages may be equal to MNRP within any or all firms even though those wages are unequal through the market, and vice versa. In contrast to the unrealities of strict marginalism, these modifications make it tenable to argue that (1) employers do in fact try to achieve marginal balance (wage = MNRP) whether or not they seek optimal conditions in other aspects of their operations, and that (2) to do so requires no more complicated calculation in many jobs than to hire the number of man hours that can be kept reasonably busy on a product that can be sold.[10]

More importantly, even if the adjustments between wage and MNRP are inaccurate within firms, these errors should be presumed random unless some systematic bias is demonstrated. If they *are* random, then the *average* wage will equal the *average* MNRP, except for a comparatively small statistical error related to the standard deviation of the mean. Under the present approach via the frequency distribution two important things thus appear: (1) wage inequality constitutes no disproof of hypothesis #1—that the mean is determined by marginal productivity, and (2) experimental "perfection" may be sought in the direction of improved sampling rather than through unrealistic simplifying assumptions.

An important term in the hypothesis is "approximate." If it implies extremely wide latitude, the hypothesis may as well be discarded, and with it the whole of marginal wage analysis. For purposes of further investigation this prob-

[7] Fuller detail on the results of separating these two aspects of theory may be found in Kuhn, *op. cit.*, Chaps. 14, 15.

[8] John F. Due, *Intermediate Economic Analysis* (Homewood, Ill.: Irwin, 1956), pp. 305–306.

[9] Kuhn, *op. cit.*, pp. 331, 347.

[10] Further detail in support of this point is also found in *ibid.*, pp. 350–362.

lem may be approached through a sub-hypothesis: that the accuracy of the approximation varies with the maturity of the market. To illustrate extreme immaturity, when Aramco first started to train erstwhile Arab tribesmen to handle oil rigs in Saudi Arabia, the forces of supply and demand almost undoubtedly allowed an extremely wide latitude in the mean wage—perhaps several thousand per cent. By contrast a widely found and reasonably standardized job (such as clerk-typist or maintenance carpenter A) in a medium to large market area during a period of relative economic stability would illustrate a mature market. Merely to set up some figure to shoot at, it may be guessed that in such a market marginal forces push the mean wage to within three to five per cent of its actual value. It seems unlikely that the error will be more than ten per cent. The error of approximation will be greater in the cases of dynamic change, smaller markets, vaguely-defined jobs (such as semi-skilled operatives), and for jobs peculiar to a particular firm or industry.

The second half of the hypothesis—that the precise value of the mean is determined by institutional forces or fortuitous events—can hardly be disputed if the first half is accepted. However, if particular firms or bargaining units consciously alter their position relative to the mean, then such changes will change the mean itself unless they are symmetrically distributed.

Hypothesis 2: That the range of dispersion of wages is a function of imperfections in the supply of labor.

According to theory the wage for any particular type of labor would be equal throughout the market if labor were perfectly mobile, and if employers also behaved as hypothesized. In practice wages are not equal. In general they tend to fall within a range extending about 33 per cent above and below the mean (a ratio of 2 to 1 around a mean of 1.5), with some wages showing a much narrower and some a much wider spread.[11] The question in connection with this hypothesis is: why is the spread what it is, rather than being much wider or much narrower? Why is the dispersion around the mean in the neighborhood of plus or minus 33 per cent instead of twice or half that amount?

The major problems in connection with this hypothesis are classificational. The first grows from the fact that a range of dispersion presumably represents a balance between equalizing and disequalizing factors—the centripetal and centrifugal forces in the case. Since the disequalizers of wages seem quite capable of creating and living with extremely wide wage discrepancies (many new industries would come into existence if they could get labor at 10 cents an hour, and some existing ones could afford a hundred times that amount if necessary), the limits of about 2 to 1 observed in fact must be presumed to be imposed by the equalizing forces. For this reason all the centrifugal forces will be assigned to hypothesis 3, and hypothesis 2 will concentrate exclusively on the factors which limit the width of the dispersion.

A second problem of classification arises from relaxing the marginal assumptions. Under normal marginalism hypothesis 2 is virtually true by definition. Perfect mobility is the force which pushes wages to equality among firms. Hence inequality must be attributed to imperfect mobility, and none of it need be attributed to the demand. The present acceptance that employer behavior may be imperfect raises no problem concerning the *upward* pressure toward equalization. Any employer, perfect or imperfect, who pays less than the market rate can have his wages coerced upward by labor mobility if his workers leave him. Since perfect supply alone could coerce the rates upward, the persistence of below-market rates can be ascribed solely to imperfections in supply. However, even perfect labor mobility cannot coerce *downward* the rates of an employer who deliberately pays more than the market requires. If he will not lower his rates, then neither will he hire the larger number of workers marginally prescribed by the lower rate. If he will not hire, workers in the low wage firm then lose their freedom to leave their employer, and with it their ability to coerce his wages upward. Hence "imperfect" employers can

[11] Further study may suggest that the interquartile range, or some other measure, may be more useful, and no particular brief is here made for the overall width of the distribution. It might also be argued that absolute rather than percentage differences should be considered. That argument apparently has much strength for the short run, but certainly is not valid for a longer period—as during a rise in wages from fifty cents to two dollars an hour.

maintain wage inequality even in the face of perfect labor mobility.

However, this situation does not destroy the hypothesis, because of the way it seems analytically desirable (at least to the author at the present moment) to classify certain types of behavior. "Demand" for labor is here construed to reflect only the demand for the product and the cost structure (or production function) of the firm. "Supply," on the other hand, will include all behavior which grows out of characteristics of workers, whether that behavior is exhibited by workers, or by employers adjusting to their characteristics. To illustrate, the horizontal mobility which would theoretically bring wage equality is blocked by employers who hire only at the bottom and promote from within. However, promoting-from-within is clearly a response to such employee characteristics as the desire for security, personal attachments, and the conditions of acquiring job knowledge. It is not a response to the firm's cost structure or product market. Similarly, the practice of paying more than the market rate is usually expected to have some desired effects on employees; it too reflects characteristics of workers. In brief, if employees were impersonal, perfectly mobile, interchangeable units the employer practices which inhibit mobility would largely disappear. Hence the hypothesis that the range of dispersion is due to imperfections in supply alone becomes both tenable and meaningful.

However, an employer might pay more than the market rate for some non-economic motive unrelated to employee characteristics, such as personal vanity. To do so would invalidate the suggested classification. Despite the virtual certainty that such cases exist, the classification and the hypothesis are retained, for two reasons. First, the amount of deviation that is necessary to satisfy the non-economic motive depends on how much deviation already exists. For example, if almost perfect equality of wages already prevailed, then a two per cent deviation above the average would probably be sufficient to inflate the employer's ego. But under the much wider discrepancies actually created by labor immobility, a much larger deviation is required. Hence, while employers might cause the *fact* of a deviation, the characteristics of workers determine its *amount*. Secondly, the spread caused by imperfect supply is almost certainly greater than that created by non-economic motives of employers. Hence such employer actions would determine the location of their firms *within* the spread (a matter for hypothesis 3) rather than the width of the spread itself.

To move to a different problem, in the hope of achieving greater testability of wage theory it seems desirable to classify both psychic income and the cost to the workers of changing jobs as imperfections rather than as bona fide economic justifications for wage differences within an occupation. Psychic income does, of course, affect the total supply of labor to a given occupation, and is therefore a clear market force creating differentials *between* occupations. But it seems unlikely that "psychic" preference to work for one employer rather than another, at the same job, will affect either the total supply of labor or the average wage for that job. Hence it seems preferable to treat psychic preferences *within* occupations as imperfections. The alternative is to divide each market into sub-compartments based on constantly shifting and highly subjective, often personal, considerations.

As to the second item, the cost to workers of shifting from one job to another within the same market may involve economic costs. But since these costs differ from worker to worker it is methodologically impossible to establish any framework based thereon which would justify a differential of any determinable amount between firms. Therefore it seems that this factor should also be treated as an imperfection in labor mobility rather than as a market force operating through the supply curve.

Another related problem arises if inductive research is to be conducted in this area—the lack of exact comparability of jobs, workers, and wages among firms. That is, if we propose to study the cause and nature of the wage distribution, only a homogeneous group of jobs and workers should be included within any one distribution, and the wages should be expressed in comparable units. Such homogeneity can rarely be achieved in fact. But we can at least partially rationalize our way out of this dilemma, as follows. Since wages would be equal if the supply of labor were perfect, the study of the dispersion is a study of the imperfections. To the extent that qualitative differences among jobs, workers, and wages are not discernible to the reasonably con-

scientious researcher, they are probably also not discernible to the workers or employers involved. If so, the imperfections in the research technique coincide with the imperfections in the market. This coincidence then justifies throwing into a single distribution those jobs, workers, and wages which (after reasonable study) seem comparable to the researcher!

To return to the main point, given the classification of forces as described, hypothesis 2 again becomes true by definition. This does not mean that it lacks interest, as a variety of sub-questions arise in connection with it. In what kinds of jobs and labor markets are the ranges of dispersion narrow and in what kind are they broad? Do unions narrow or widen the range? What are the effects of the expansion or contraction of an industry or community? Of prosperity and depression? How does the dispersion in single-industry jobs compare with that of multi-industry ones, and what does the difference suggest about the nature of and motives for mobility? How do single-union jobs compare with multi-union? How do wages for jobs in local-market industries compare with those in national-market industries? How is the spread affected by the introduction of outside firms into an erstwhile local show? What is the outside limit of the spread, what is the average spread, and what can we learn from these facts about both the potencies and limitations of labor mobility as a market equalizer? Or do the limits of the spread seem to be determined by forces other than labor mobility—such as dissatisfaction? Is the width of the range associated mainly with the type of job or the type of market? Is the spread within occupations wider where the spread between occupations is wider, and the reverse?[12] In brief, it would seem, that a comparative study of the range of intra-occupational wage dispersion within markets and between markets might provide some extremely useful information about the nature of wage determinants. Findings of this sort could then be grouped as sub-hypotheses under the main hypothesis 2.

Together the forces described in the first two hypotheses—if true or if replaced by acceptable substitutes—establish (1) the level of the distribution and (2) the range within which the wage of any particular firm or other decision-making unit will fall. The remaining task is to account for the location of any particular firm or unit within that range.

Hypothesis 3: That the position of any particular wage within the distribution, and consequently of any clustering or skewness, is attributable primarily to competitive conditions in the product market, secondarily to such institutional factors as collective bargaining and managerial policy, and thirdly and fourthly to cost structure and to changes in the value productivity of labor.

The priorities assigned the four factors in the hypothesis reflect a subjective evaluation of the general run of studies currently available, and the "suspicion" voiced by Reynolds[13] and shared by the author[14] that "the monopolistic or competitive structure of the industry . . . is of prime importance." Forces other than these four will normally also be present, and at times dominant. But these four, and especially the first two, seem generally controlling. Other students might suggest a different priority, as may subsequent studies, and no defence of the sequence is presented here.

A major question arises in the distinction between the economic and the institutional factors in the hypothesis. All institutional forces are lumped into a single category, which is given second priority. The category includes such factors as the size and structure of bargaining units, internal politics of union and management, the psychological force of historical relationships, legislation and other political influence, dominant personalities, accidents of history, and non-economic motives. The many studies of personal motives and political adaptations within unions and managements are all pertinent here. Sub-hypotheses under this section might take such forms as: Other things equal, the greater the centralization of control over union bargaining strategy the higher will be the wage; the more secure the union leadership the less intense will be the union pressure for bargaining concessions; the greater the importance to management of continuous production, the higher will be the wage; etc.

The economic factors which constitute the first, third, and fourth items in the hypothesis

[12] A study currently under way by Glenn E. Burress and Donald Kress at the University of Cincinnati strongly suggests that this is the case.

[13] Reynolds, *op. cit.*, p. 240.

[14] Kuhn, *op. cit.*, pp. 403–410.

deserve special attention. Although it is certainly not now tenable to state the main hypothesis in marginal terms, there is a distinct possibility that these three items are essentially marginal in origin. If so, marginal theory helps to explain some phenomena that are far more explicit than is now generally believed. Because of its importance, the possible marginal nature of these items will be illustrated.

To deal with one aspect of the product market, the administered price oligopoly tends to react to a decline in demand by curtailing production and maintaining prices. Its corresponding behavior with respect to labor is to curtail employment and maintain wages. The very act of protecting product prices sustains—perhaps even raises—the marginal revenue product of labor. If so, the high wage usually paid in such industries is associated with a high marginal product. By contrast, the multi-firm price-competitive industry tends to react to a decline in demand by cutting prices and maintaining production, with the corresponding reaction toward labor of cutting wages and maintaining employment. Lower prices mean a lower value-product of labor, and the low wage paid in this type of industry is associated with a low marginal product. By extension of the same reasoning it seems entirely possible that differences in MNRP are the major cause of this widely observed type of inter-industry differential.

Differences in cost structure may also produce wage differences through essentially marginal reactions. High capital plants or industries often show a rigid ratio of men to machines in the short run, with the value-product of each man lying well above the acceptable market range. The wages in such industries will nevertheless be coerced downward to within the acceptable range. Being coerced into the range from above, however, they will probably remain permanently in the upper part of the range. By contrast, the marginal product of successive workers in unmechanized operations will decline by only small increments. Here the employer has much to gain from the differential "rent" of the first workers if he can hire a large number at very low wages. But here too the wage will be coerced into the acceptable market range. Being coerced from below, it will probably remain near the bottom of the range. Thus interfirm or inter-industry differentials associated with differing cost structures may be essentially marginal.

Changes in value productivity of labor can be accommodated in marginal theory without relaxing any perfection except staticism. As soon as improvement is accepted, then it is precisely marginal for wages to be higher at the point of incidence until the new condition has shaken down.

If the reasoning in these three illustrations should prove acceptable, it might then be simpler and more meaningful to reword hypothesis 3 to read: *That the position of any particular wage within the distribution, and consequently of any clustering or skewness, is associated primarily with the marginal net revenue product of labor, and secondarily with institutional forces such as collective bargaining and managerial policy.* It would be improper, however, to state the hypothesis in that form at this time.

CONCLUDING OBSERVATIONS

If the present proposal is to perform a true integrating function it should encompass all important aspects of wage theory. Thus far no mention has been made, however, of aggregate wage income, the distributive share going to wages, occupational and geographic differentials, and analysis of the firm. The reasons in each case are briefly as follows.

To the extent that aggregate wage income is a separate problem from that of real wage rates it is determined mainly by aggregate employment. But the explanation of aggregate employment lies primarily in the field of cycle theory and related areas, and should be excluded from the assignment of wage theory, as such.

To move to the problem of distributive shares, wages (along with rents, interest, and profits) are presumed to be determined in particular instances. Distributive shares are then simple summations of the particulars. To speak of labor's share *as an independent problem* smacks of the wage fund theory. If wage theorists delineate the determinants of wages, while others do the same for the other factors, some general economists may then combine these separate theories so as to explain the behavior of distributive shares. That some particular wage theorists may also take on this general function should not confuse the issue: distributive

shares should not be considered a part of wage theory *as such*.[15]

The omission from the framework of occupational and geographic wage differentials, and of analysis of the firm, are more apparent than real. Analysis of the firm is incorporated by indirection, since it is inescapable in dealing with the marginal hypotheses. Geographic and occupational differentials will necessarily be used in generous measure in the course of testing the various hypotheses, since such differentials (along with interfirm and inter-industry differentials) provide the only empirical toe hold we can get in the field.[16]

If we exclude aggregate wages and distributive shares from the scope of wage theory, as such, and recognize that the analysis of the firm and all kinds of wage differentials are directly or indirectly included in the proposed approach, we can then state the following summary. Wage theory has long shown an unsatisfactory relationship between its deductive, theoretical aspects and its inductive, institutional ones. So long as wage theory revolves around explanations of *the wage* (for any particular type of labor) this relationship will necessarily remain nebulous. If, however, we accept that wages normally fall into a frequency distribution of considerable width, and orient our knowledge in terms of that distribution, a simpler and more manageable pattern seems to emerge. The approach remains pleuralistic, in that it incorporates both marginal and institutional explanations, and thus avoids "focussing on one set of forces and sweeping the other under the rug."[17] At the same time it achieves what is probably the maximum degree of unity possible amidst this diversity by relating to a single pattern all material which seems properly assignable to wage theory. By attempting to outline more specifically what the whole of the wage story may look like when filled in it also helps locate gaps in the existing knowledge, as illustrated by the variety of questions which arise in the closing discussion of hypothesis 2. Finally, by hypothesizing marginal behavior to explain clearly definable and statistically measurable concepts, rather than some vague "long run general level" of wages, this orientation should sharpen the question of what, if anything, in the real world is either explained or clarified by marginal analysis.[18]

[15] The possible impact of unions on distributive shares is sometimes studied as a part of wage theory. Such study is consonant with the present suggestion so long as distributive shares are used as a *tool* of wage theory—i.e., for studying the effects of unions upon wages. Although the precise motives may be much mixed in any particular empirical study, such an approach is nevertheless analytically quite different from making the explanation of distributive shares an *objective* of wage theory.

[16] The fact should not be obscured, however, that in the proposed framework geographic and occupational differentials do occupy a different role from the interfirm and inter-industry. In mathematical terms, if the wage determinants envisaged in the three hypotheses were expressed as a general formula, the firm and the industry would appear as variables, since they appear in hypothesis 3. But the frequency distribution focuses on the wage determinants *within* an occupation and *within* a market area. Occupation and geographic area would therefore not appear as variables, but as determinants of the coefficients when the formula is applied to a particular case.

In non-mathematical terms, firms and industries are wage determinants; different occupations and geographic areas provide different specimens. For methodological purposes, a single interfirm or inter-industry differential (different pay for the same work in the same market) has significance to wage theory. A single occupational differential (different pay for different work) or geographic differential (different pay in different markets) has no significance; only *differences* among occupational or geographic differentials are significant. These distinctions all reflect that the proposed framework retains a market orientation, even though non-market forces are freely admissible as operating forces. A different orientation would create a different set of relationships.

[17] Reynolds, *op. cit.*, p. 240.

[18] Following the completion of this paper the author had an opportunity to examine briefly Allan M. Cartter's new volume, *Theory of Wages and Employment* (Homewood: Irwin, 1958). He would agree with Cartter that "except for a few areas ... it would seem that research in these fields [inductive study of union and management institutions and bargaining processes] has gone beyond the point of diminishing returns" (p. 180). The area which seems highly fruitful for deductive study of broad significance is the width of the wage distribution under varying circumstances, as outlined in connection with hypothesis 2. Such study, along with the whole of the approach here outlined, might fall into the category of the kind of "... informed theoretical empiricism ..." which Cartter urges (p. 180).

THE DEBT-EXPENDITURE HYPOTHESIS AND RESIDENTIAL CONSTRUCTION

DAVID I. FAND*

University of North Carolina

This paper is devoted to an empirical examination of the debt-expenditure hypothesis as it applies to residential construction. To test this hypothesis residential construction and expenditures are analyzed to see whether they bear any consistent relation to either the flow of mortgage lending or changes in mortgage debt outstanding. The bulk of the paper is devoted to examining the regressions of a number of alternative construction-expenditure variables on associated debt variables; in these regressions residential construction or expenditure is the dependent variable while mortgage lending or debt is the independent variable.

The debt-expenditure hypothesis asserts that categories of capital spending, particularly expenditures that are large relative to the income, saving, or net worth of the economic units involved, require corresponding increments of debt or tend in practice to be associated with such debt increases. This is sometimes rationalized on the grounds that the distribution of capital outlays by economic units does not match the distribution of saving so that the expenditures cannot be made without borrowing and the resulting increase in debt. In its simplest version, the hypothesis states that the expenditure-debt ratio is constant or, more generally, that expenditure is a linear function of debt.

In discussions of national housing policy, especially particular housing bills, the debt-expenditure hypothesis is sometimes used to justify measures liberalizing mortgage lending terms or to adopt new Federal lending programs. Recently, the Senate Committee on Banking and Currency, in its report on S. 3418, urged adoption of measures to reduce FHA downpayments, to increase FNMA secondary market activities, and to extend the VA direct lending and the loan guaranty program for 2 years. The Committee report went on to say: "If enacted in time, the bill could provide financing for an additional volume of housing starts in 1958 which can be conservatively estimated at 200,000 units."[1] The tenor of the entire report is that liberalized terms are both a necessary and sufficient condition for more housing construction. During the tight money experience of 1955–1957, the view was often expressed that monetary tightening had a particularly sharp impact on the supply of funds for residential mortgages; and that the reduced availability of funds, rather than the rise in interest rates, was largely responsible for the sharply reduced housing expenditures.[2] Liberalized terms and an increased availability of mortgage funds were thought to be a necessary if not sufficient condition for increased housing expenditures.

Aside from its immediate relevance to discussions concerning national housing policy, the debt-expenditure hypothesis is used in some macroeconomic models as a basis for incorporating monetary variables in a more general model of income and expenditure.[3] For if there are predictable and dependable relations between, say, investment expenditures or other components of final demand and increments of debt, these re-

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[1] U. S. Senate. Committee on Banking and Currency, *1958 Emergency Housing Legislation.* Report to accompany S. 3418 (S. Rept. #1349), March 6, 1958, p. 3.

[2] U. S. Senate. Committee on Banking and Currency, *Mortgage Market Problems.* Hearings.... and Roundtable, November 28, 29, 1955.

[3] For examples of some efforts along these lines, see John G. Gurley and E. S. Shaw, "The Growth of Debt and Money in the United States, 1800–1950," *Review of Economics and Statistics*, Aug. 1957, Vol. 39, pp. 250-262, and H. P. Minsky, "Monetary Systems and Accelerator Models," *American Economic Review*, Dec. 1957, XLVII, pp. 859–883.

lations between monetary variables and income-expenditure variables may be incorporated into a more general theory of income determination.[4]

Finally, the debt-expenditure hypothesis comes up in discussions of economic growth and monetary policy. Some have argued that the ratio of GNP to total debt has been moderately stable for long periods and infer that to keep GNP growing at some assumed rate we require a corresponding growth in debt, whether public or private. Others stress the close connection between particular expenditures and debt items both as evidence of the ineffectiveness of general controls and as providing a rationale for the use of qualitative controls. They therefore conclude that general quantitative credit controls are inadequate. This reasoning is most noticeable in discussions of consumer credit.[5]

We feel that it is worthwhile examining the empirical content of the debt-expenditure hypothesis as applied to residential construction even though we make no attempt to rationalize it. Considering the typical high loan-to-value ratios both in the construction and purchase of houses, residential construction or expenditure is surely among the most favorable cases for testing its predictive content. Nevertheless, even in this favorable case, it is possible to set up plausible arguments both for and against the simple version of the debt-expenditure hypothesis.[6] A sophisticated and rigorous analysis of the relation of debt to capital expenditure involves difficult problems concerning behavior under uncertainty.[7] Given the theoretical difficulties on the one hand and the extreme simplicity of the debt-expenditure hypothesis on the other, it seems desirable to test the predictive value of this simple hypothesis.

Our primary purpose therefore is to apply the debt-expenditure hypothesis to residential construction and to quantify the extent to which increases in mortgage lending or mortgage debt are associated with increases in residential construction or expenditures. It should be emphasized that we are not estimating a demand function for mortgage debt or residential housing. Nor are we attempting to derive a set of equilibrium conditions that determine the optimum amount of debt for a given capital expenditures plan.

The debt-expenditure hypothesis postulates that the debt and the expenditure move together but it does not necessarily imply which variable is to be thought of as the independent variable. The treatment will depend in large measure either on the macroeconomic framework used or the purposes to which the hypothesis is being put.

Our decision to use mortgage lending or debt as the independent variable and residential construction as the dependent variable was determined by two considerations. First the debt-expenditure hypothesis and related ideas are increasingly being used in models of income determination to stress monetary variables. Second, most discussions of national housing policy typically involve changes in mortgage lending terms on government underwritten mortgages (minimum downpayments, maximum maturities and interest rate) or changes in the availability of mortgage funds (FNMA's secondary activities or FHLB advances) and it is natural to think

[4] It is, of course, true that a successful blending of the monetary and the income-expenditure approaches on the basis, say, of the debt-expenditure hypothesis requires two sets of links: (1) a link between expenditure and debt; (2) a link between total debt and monetized debt—the debt held by the commercial banking system. The debt-expenditure hypothesis is concerned with the first of these two sets of links.

[5] P. W. McCracken, "The Debt Problem and Economic Growth," *Michigan Business Review*, Nov. 1956, Vol. 8, p. 11. An excellent history of the various views on consumer credit is given in Homer Jones' "Theories of Consumer Instalment Credit in Relation to Economic Stability," in U. S. Board of Governors of the Federal Reserve System, *Consumer Instalment Credit*, Part I, Vol. I ("Growth and Import"), Chapter XII, pp. 235–256.

[6] Since the average downpayment on a house is presumably large relative to the average holdings of liquid assets or net worth of many prospective home owners, it seems reasonable to suppose that changes in mortgage debt would be highly correlated with changes in residential house purchases. But changes in mortgage debt reflect not only the number and value of new houses purchased but also the loan-value ratios, the extent to which junior financing is used, the ratio of sales of existing houses to new houses and the extent to which real estate is used as collateral.

[7] A discussion of some of these factors is given in F. Lutz and V. Lutz, *The Theory of Investment of the Firm* (Princeton: Princeton University Press, 1951). See especially section 6, "Factors influencing choice between loan and equity capital."

of the mortgage lending or debt as the independent variable.[9]

One final methodological note. In the tests described below we use as the dependent variable such variables as private housing starts, dollar amount of construction put in place, or new house purchases by consumers. These variables all relate to either the construction or purchase of new houses. Yet, from the viewpoint of the debt-expenditure hypothesis, it is just as relevant to test how well mortgage debt predicts existing house purchases as it is to test its ability to predict new house purchases or new construction. The decision to restrict these tests to new houses is primarily practical: these variables play an important role in determining total output and employment.

The tests in Section I apply this hypothesis to the postwar expenditures of the national economy and the personal sector; in Section II, to a number of residential construction variables. Since houses and other capital goods may be bought by individuals, business units (corporate and non-corporate) and government units, and the role which debt plays in financing expenditures may presumably vary from sector to sector, the tests summarized in Section III are therefore based on data cross-classified by type of capital good and by the sector incurring the expenditure.

SECTION I: EXPENDITURE AND DEBT: THE NATIONAL ECONOMY AND THE PERSONAL SECTOR

We introduce the test of the debt-expenditure hypothesis by examining how well it succeeds in describing the expenditure and debt patterns of the national economy and the personal sector in the post-war period, 1946–1957.[9, 10]

In Table 1 the debt and expenditure relationships of the national economy, for the period 1947–1957, and of the personal sector, for the period 1946–1956, are summarized.[11, 12]

National Economy

1. A regression of GNP on total debt, both net and gross, where both the GNP and the debt data are adjusted to reflect a July 1 level. The debt data include both public and private debt.

2. A regression of private domestic investment, both gross and net, on

a. the annual change in net private debt, and

b. the annual change in net private long term debt.[13]

3. A regression of new construction expenditures (national income accounts) on the increase in total mortgage debt outstanding (residential and commercial mortgage debt).[14]

[8] In a model of income determination which highlights investment expenditures or other categories of final demand, which relegates monetary variables to the background, and which tends to regard the debt as being primarily passive or permissive, it is more natural to think of the debt as the dependent variable. In a model of income determination which highlights monetary variables and thinks of monetary changes as inducing changes in expenditures, in their timing, if not in conception, it is more natural to think of the debt as the independent variable. Finally, regardless of the model one may prefer, since most discussions of national housing policy center on changes in mortgage lending terms, it would suggest using mortgage debt as the independent variable.

[9] To examine this hypothesis systematically, we necessarily use it in some ways that are less easy to quantify that others. For example, in the case of consumer durable expenditures the debt variable, consumer instalment credit, is usually given explicitly; in cases where the debt-expenditure hypothesis is not given explicitly, one must infer the variables that are thought to be related.

[10] With the exception of the first two regressions in Table 1, of GNP on gross and net total debt, the subsequent regressions are based on data such as investment, construction, housing starts, new house purchases, gross mortgage lending and net changes in debt. By using data which are essentially first differences—e.g., new construction is the increase in the housing stock—we may reduce the statistical biases resulting from serially correlated disturbances.

[11] In testing the relationships between debt and expenditure for the national economy, we used the revised post-war national income and product accounts given in the July 1958 *Survey of Current Business*. Since the revised 1957 data on the composition of personal saving is not yet available, we restricted our tests to the period 1946–1956.

[12] Sources for the data used in this and the following tables are given in the Appendix.

[13] Net private long term debt is defined as the sum of corporate long term debt and total mortgage debt.

[14] The construction data in the national income accounts differ somewhat from the construction data published by the Building Materials and Construction Division of the Department of Commerce and used in the subsequent tests.

Personal Sector

4. A regression of investment in physical assets (including business and farm inventories), both gross and net, on the increase in debt (mortgage debt and other long and short term debt).

5. A regression of investment in non-farm housing, both gross and net, on the increase in mortgage debt on non-farm housing.

Before describing the results of this regression analysis we should strongly emphasize that these regression functions are intended as prediction equations: given the independent variable these equations enable us to predict the dependent variable. A good prediction equation, or a close relation, means that our predictions of the dependent variable are fairly close to the observed values for the period covered by the data. Our regression equations are not to be interpreted as estimates of either a functional or structural

TABLE 1

EXPENDITURE AND DEBT: THE NATIONAL ECONOMY AND THE PERSONAL SECTOR[1]

Construction or Expenditure Variable	Mortgage Lending or Debt Variable	Period of Time Covered	Regression Coefficient[2]	Standard Error	r^2
National Economy					
GNP	1. Total net debt (private and public)	1947–1957	0.681	0.039	0.969
	2. Total gross debt (private and public)	1947–1957	0.567	0.032	0.969
Gross Private Domestic Investment	1. Annual changes in net private debt	1947–1957	0.555	0.299	0.277
	2. Annual changes in net private long term debt	1947–1957	2.874	0.390	0.858
Net Private Domestic Investment	1. Annual change in net private debt	1947–1957	0.373	0.132	0.470
	2. Annual change in net private long term debt	1947–1957	1.006	0.414	0.396
New Construction	1. Annual change in total mortgage debt (non-farm residential and commercial plus farm mortgage debt)	1947–1957	2.262	0.336	0.834
Personal Sector					
Gross Investment in Physical Assets	Annual increase in debt of the personal sector	1946–1956	1.036	0.321	0.536
Net Investment in Physical Assets	Annual increase in debt of the personal sector	1946–1956	0.706	0.205	0.569
Gross Investment in Housing (non-farm)	Increase in non-farm mortgage debt	1946–1956	1.266	0.125	0.919
Net Investment in Housing	Increase in non-farm mortgage debt	1946–1956[1]	1.013	0.122	0.885

[1] Annual data

[2] The units of the regression coefficients are expenditures in billions of dollars per billion dollar change in debt except for the first two regressions where the units are billions of dollars of GNP per billion dollars of outstanding debt.

equation relating expenditure and debt. Finally we should also note that a regression equation may give very satisfactory predictions even though the functional relationship is weak or even totally absent.[13]

The postwar debt-expenditure relationships summarized in Table 1 indicate that, with one exception, all regression coefficients are significant, using a two tail test, at the 0.05 level. The close association of GNP to both gross and net total debt has led some theorists to develop models which attempt to predict the required growth in debt necessary to sustain a projected level of GNP. In the four regressions using domestic investment as the dependent variable, that between gross private domestic investment and net change in private long term debt is the basis for the most accurate estimates or predictions. Finally, the regression of new construction on changes in total mortgage debt also seems to give very satisfactory estimates.

Of the four regressions for the personal sector, the two regression equations using housing expenditure as the dependent variable give very close association. Since this paper is mainly concerned with residential construction, it may be worthwhile to illustrate the meaning of these two regressions.

For the period 1946–1956 an increase of $1 billion, e.g., from $9 billion to $10 billion, in non-farm mortgage debt of the personal sector has been associated with:

1. an average increase of $1.266 billions in gross investment in non-farm dwellings,
2. an average increase of $1.013 billions in net investment in non-farm dwellings.

In pointing up the average increase in expenditure per given increase in debt, this interpretation of the regression line emphasizes average outcome—the slope of the line. In addition to these estimates of the average change in expenditure we may also specify the range in which the true change is expected to lie.

For example, the standard errors enable us to place confidence intervals around the true change in expenditures per billion dollar change in debt. Using 95% confidence intervals, it is seen that a $1 billion increase in non-farm mortgage debt is associated with:

1. an average increase of between $0.983 billion and $1.549 billion of gross investment in non-farm housing,
2. an average increase of between $0.737 billion and $1.289 billion of net investment in non-farm housing.

On the basis of our test criterion—the regression coefficient divided by its standard error—these regressions, especially those using investment in housing as the dependent variable, suggest that the relation between debt and expenditure is significant enough to warrant further analysis.

SECTION II: RESIDENTIAL CONSTRUCTION, HOUSING STARTS, MORTGAGE LENDING AND MORTGAGE DEBT

In applying the debt-expenditure hypothesis to residential construction, a number of alternative construction and debt variables are available. We may choose as our dependent variable the number of dwelling units started or the dollar amount of new construction put in place; and both of these concepts may be further subdivided between 1–4 family and multifamily units. Similarly, we may use gross mortgage lending or changes in the mortgage debt outstanding.

Since all these variables are involved in policy discussions, it seemed desirable to test the debt-expenditure hypothesis for the more commonly used series of residential construction, housing starts, mortgage lending and mortgage debt.

For the period 1950–1957, flow of funds data estimate the breakdown between 1–4 family and multifamily construction; these estimates are available on a quarterly basis. The regressions using quarterly data described below involve comparisons of 1–4 family and multifamily activity (dollar amount of new construction put in place) with several debt variables for the years 1950–1957.

[13] "The fact that β is different from zero does not imply that X is the cause of Y. For example, if X is the length of one's left arm and Y the length of his right arm, since one who has a long left arm usually has a long right arm, the regression coefficient β is greater than zero. But one can hardly say that Smith's right arm is long because his left arm is long."

"However, cause or no cause, for the purpose of prediction the regression equation is useful. If one has a long left arm, the chances are that his right arm is also long."

Jerome C. R. Li, *Introduction to Statistical Inference* (Ann Arbor, Mich.: Edwards Brothers, 1957), p. 303.

The other regressions consist of annual comparisons of residential construction activity, private non-farm housing starts, commercial construction and farm construction and their related debt variables.[16] Most of these annual tests cover the period 1939–1957 because several of the mortgage lending or debt series are not available prior to 1938–1939.[17]

The Quarterly Comparisons

1. A regression of quarterly 1–4 family housing activity—the dollar amount of new construction put in place—on five alternative concepts of mortgage debt:

a. Quarterly changes in 1–4 family mortgage debt (net of construction loans);

b. Quarterly changes in 1–4 family mortgage debt (inclusive of construction loans);

c. Gross mortgage lending on 1–4 family houses (non-farm mortgage recordings of $20,000 or less);

d. Gross mortgage lending on new and existing house purchases (exclusive of other purposes);

e. Gross mortgage lending on new house purchases (excluding the gross lending on existing house purchases and other purposes).

2. A regression of multifamily activity—the dollar amount of new construction put in place—on changes in multifamily mortgage debt. These regressions are for the period 1950–1957.

3. A regression of residential construction activity—defined as the dollar amount of new dwellings plus construction of non-housekeeping units and additions and alterations—on the change in residential mortgage debt for the period 1939–1957.

4. A regression of residential construction activity—defined as the dollar amount of new dwellings put in place, including 1–4 family and multifamily construction—on the change in residential mortgage debt for the period 1939–1957.

5. A regression of private non-farm housing starts on changes in residential mortgage debt outstanding, 1939–1957.

6. A regression of private 1–4 family non-farm housing starts on:

a. Changes in 1–4 family mortgage debt outstanding,

b. Gross mortgage lending on 1–4 family starts.

7. A regression of commercial construction on changes in commercial mortgage debt outstanding. Commercial construction was defined as the sum of the dollar amount of the following two categories: "office buildings and warehouses" and "stores, restaurants and garages." "Industrial construction" and "other non-residential construction," and public utility construction were excluded.

8. A regression of farm construction on changes in farm mortgage debt outstanding. Farm construction was defined as the dollar amount of "operators dwellings" and "service buildings."

The debt-expenditure relations for residential construction activity and starts are summarized in Table 2. All regression coefficients are significant, using a two tail test, at the 0.01 level. The five regressions using the quarterly series of dollar amount of 1–4 family construction put in place as the dependent variable yield significant regression coefficients. Since our test criterion is the significance of the regression coefficient, we get the best association, or highest correlation, using as our independent variable either 1–4 debt inclusive of construction loans or gross lending on new house purchases.[18]

The regression association of multifamily activity on quarterly changes in multifamily debt is not as strong as the above. When we use as our dependent variable the dollar amount of either residential construction or new dwellings, we get, in each case, regression coefficients that show the closest association of any. As our dependent variable shifts from dollars of construction to the number of starts in physical units, we get regression coefficients with approximately average effectiveness.[19] Finally, the two regres-

[16] Although this paper is primarily concerned with the debt-expenditure hypothesis as applied to residential construction, we thought it would be interesting to include the regression analysis of commercial construction and farm construction.

[17] Gross mortgage lending series is not available prior to 1939; the multifamily and the commercial mortgage debt series are not available prior to 1938.

[18] The ratio of b/s_b has a t distribution. It can be shown that, given the number of observations, the square of this ratio is a monotonically increasing function of r^2.

[19] The two regressions involving private non-farm permanent housing starts may be improved by deflating these variables with some index of construction costs. But the main virtue of the debt-expenditure hypothesis is its simplicity, and we are

TABLE 2

RESIDENTIAL CONSTRUCTION, HOUSING STARTS, MORTGAGE LENDING AND MORTGAGE DEBT

Construction or Expenditure Variable	Mortgage Lending or Debt Variable	Period of Time Covered	Regression Coefficient[2]	Standard Error	r^2
Dollar amount of 1–4 family construction put in place	Changes in 1–4 family mortgage debt (net of construction loans)[1]	1950–1957	0.714	0.126	0.515
	Changes in 1–4 family mortgage debt (inclusive of construction loans)[1]	1950–1957	0.856	0.075	0.815
	Gross mortgage lending on 1–4 family houses[1]	1950–1957	0.196	0.025	0.674
	Gross mortgage lending ex other purposes[1]	1950–1957	0.230	0.029	0.676
	Gross lending for new house purchases[1]	1950–1957	0.589	0.052	0.812
Dollar amount of multi-family construction put in place	Change in the outstanding mortgage debt on multi-family properties[1]	1950–1957	0.559	0.176	0.252
Dollar amount of residential construction put in place (including new dwelling units, additions and alterations, non-housekeeping units)	Change in outstanding mortgage debt on residential properties	1939–1957	1.368	0.081	0.944
Dollar amount of new dwelling units put in place	Change in outstanding mortgage debt on residential properties	1939–1957	1.060	0.066	0.943
Private non-farm permanent housing starts	Change in the outstanding mortgage debt on residential properties	1939–1957	79.3[3]	8.5	0.836
Private non-farm 1–4 family permanent housing starts	Change in the outstanding mortgage debt on 1–4 family properties	1939–1957	78.9[3]	8.7	0.828
	Gross mortgage lending on 1–4 family properties	1939–1957	37.2[4]	5.0	0.755
Dollar amount of commercial construction put in place	Change in the outstanding mortgage debt on commercial properties	1939–1957	1.260	0.136	0.834
Dollar amount of farm construction	Change in the outstanding mortgage debt on farm properties	1936–1957	1.502	0.154	0.826

[1] These regressions are based on quarterly data. All others in this table are based on annual data.

[2] The units of the regression coefficients are expenditures in millions per million dollar change in debt or per million dollar lending, except for the two cases cited below.

[3] The units of the regression coefficient are starts per million dollar change in debt.

[4] The units of the regression coefficient are starts per million dollar mortgage lending.

sion coefficients derived from commercial construction and farm construction have the average effectiveness.

SECTION III: NEW HOUSE PURCHASES AND CHANGES IN MORTGAGE LENDING OR DEBT

The test relations summarized in Table 2 are based on two concepts of construction—the dollar amount of new construction put in place and the number of private non-farm housing starts. The first concept measures the construction of new residential housing in dollars; the second, in physical units. Neither of these two concepts relate to the expenditures or new purchases of residential construction since both measure, in the first instance, the increase in the housing stock or inventory. The debt-expenditure hypothesis may be formulated as a hypothesis governing the debt and expenditure relations of the final demander or the "consumer." In this formulation we are not necessarily interested in the growth of debt corresponding to the increase in the housing stock but in the growth of debt corresponding to house purchases.[20]

To make this adjustment we are required to shift from a production concept to an expenditure concept. This we do in the tests described below which utilize flow of funds estimates of expenditures by consumers on residential housing and their estimates of the mortgage debt of consumers net of construction loans. Moreover, in shifting from a production concept to an expenditure concept, we have also been able to utilize flow of funds estimates of new house expenditures, including land costs, and to derive estimates of net purchases by consumers—purchases net of depreciation.

The reader will note that in moving, say, from a 1–4 family construction put in place variable or a 1–4 family housing starts variable, to one of estimated 1–4 family new house purchases by consumers, the mortgage debt or lending variable is adjusted to reflect changes in the mortgage debt owed by consumers. In these tests the data are classified both by the type of capital expenditure and by sector.[21]

The twelve regressions described below use quarterly data for the period 1950–1957.

We e ine three expenditure variables: E_1 = new 1–4 house (non-farm) purchases by consumers; E_2 = new house purchases plus additions and alterations plus land costs; $E_3 = E_2$ less depreciation on non-farm dwellings owned by consumers. For each of these three expenditure variables we construct a regression analysis on each of the following four mortgage lending or debt variables:

D_1 = net change in the mortgage debt of consumers (net of construction loans);

d_1 = gross mortgage lending on 1–4 family houses less other purposes (gross lending on new and existing house purchases less loans for other purposes);*

d_2 = the mortgage lending series, d_1, corrected for construction loans;

d_3 = gross mortgage lending on *new* 1–4 family house purchases.

The regression coefficients of the three expenditure concepts with each of the debt concepts are summarized in Table 3.

The debt expenditure relations obtained using as our dependent variable new house purchases by individuals are summarized in Table 3. In general, all regression coefficients are significant, using a two tail test, at the 0.01 level and, indeed, at higher significance levels than those obtained using construction activity or housing starts.

But, although the associations are stronger, the improvement is not spectacular. Again, using our test criterion—the slope of the regression line—E_2 appears to be the best concept of purchases to use as the dependent variable. It is worth noting that, irrespective of which of the three concepts we use as our dependent variable, the regression coefficients are significant at about the same significance levels.[22]

We next investigated the possibility that we could improve our predictions by adding another variable measuring mortgage lending terms. Unfortunately this was not feasible since

therefore primarily interested in determining the predictive powers of the simplest statement of this hypothesis.

[20] The dependent variables, gross and net investment in non-farm housing, used for the personal sector in Table 1, are essentially purchase concepts. They may, however, include the acquisition of an existing house from another sector.

[21] In the flow of funds accounts, the consumer sector is defined to exclude farms, non-corporate enterprises and non-profit institutions.

[22] The regression coefficients, whose units are dollars of expenditures per dollar of debt, are related to average downpayments. For example, a

we could not devise a single index that would take account of changing regulations on FHA and VA downpayments and maturities, of changes in FNMA and the Federal Home Loan Bank lending policies, of changes in maximum interest rates and discounts and, finally, of changes in the mix of conventional and government underwritten mortgages. We therefore used two variables which we believe reflect overall changes in mortgage lending terms:

1. the discount rate at the New York Federal Reserve Bank = X_2,
2. the percent of VA home loans to total mortgage recordings = X_3.

We chose the regression of E_2 on d_3 as our best simple regression and investigated the possibility of its improvement by adding an additional independent variable, one of the two mentioned above.

The double regression of E_2 on d_3 and X_3 for the 32 quarters, 1950–1957, afforded no significant improvement over that on d_3 alone, as was indicated by the non-significance of the partial regression coefficient of X_3. On the other hand, the partial regression on X_2, the discount rate at the New York Federal, was significant at the 0.05 level, so that the double regression using this variable is an improvement over the simple regression: R^2, the coefficient of multiple determination is 90%; in the simple regression of E_2 on d_3 alone, r^2 is 87%.[illegible]

TABLE 3

NEW 1–4 FAMILY HOUSE PURCHASES, MORTGAGE DEBT OF CONSUMERS, AND MORTGAGE LENDING[1]

Construction or Expenditure Variable	Mortgage Lending or Debt Variable[2]	Regression Coefficient[3]	Standard Error	r^2
New 1–4 family house purchases by consumers—E_1	D_1	0.900	0.087	0.783
	d_1	0.237	0.029	0.688
	d_2	0.249	0.019	0.847
	d_3	0.595	0.055	0.793
New 1–4 family purchases plus additions and alterations plus land costs—E_2	D_1	1.148	0.117	0.763
	d_1	0.330	0.030	0.798
	d_2	0.326	0.023	0.834
	d_3	0.805	0.056	0.871
Net home purchases: 1–4 family purchases plus land costs, plus additions and alterations less depreciation—E_3	D_1	0.950	0.102	0.740
	d_1	0.255	0.032	0.676
	d_2	0.257	0.026	0.768
	d_3	0.667	0.052	0.845

[1] Quarterly data for the period 1950–1957.

[2] D_1 = net change in the mortgage debt of consumers (ex construction loans)

d_1 = gross mortgage lending less other purposes

d_2 = gross mortgage lending less other purposes corrected for construction loans

d_3 = gross lending on new house purchases.

[3] The units of the regression coefficients are expenditures in millions per million dollar change in debt or per million dollars of mortgage lending.

β of 1.1 suggests that average downpayments are approximately 10%. If the proportion of houses financed conventionally and through FHA and VA remained constant and the average downpayment on each of these three types of mortgage loans was constant, we might expect that β would be constant. On the other hand, a relative rise (fall) in conventional financing or a general rise (fall) in downpayments would tend to raise (lower) β. In the period examined, both the type of financing as well as the terms varied and we therefore expect β to vary. We are, in effect, calculating a b from data with possibly different β's.

In estimating the regression coefficients, we have assumed the general model:

$$Y = \alpha + \beta X$$

where Y is an expenditure or construction concept, X is a mortgage debt concept and α, β the two parameters to be estimated. Now if β were a function of average downpayments, e.g.:

$$\beta = \gamma_0 + \gamma_1 Z$$

where Z is the average downpayment, this simple model would be inappropriate and we would need a model such as:

$$Y = \alpha + \gamma_0 X + \gamma_1 Z X$$

where the Z, the average downpayment, is included explicitly in the model to take account of both changes in the form of financing as well as changes in downpayment. The fact that the regression equations provide fairly good predictions in the absence of any explicit allowance for known changes in financing and downpayments suggests that, at least for linear models, the fluctuations in these two variables determining Z may have offset each other enough to keep Z, and therefore β, constant. Given a constant Z, the simple model used and the more complicated model are identical.

The implications of this finding may be illustrated. We have argued before that a rise in the proportions of homes conventionally financed would tend to raise average downpayments and

SECTION IV: CONCLUSIONS

1. The regressions of expenditure on debt for the national economy and the personal sector summarized in Table 1 are significant and suggest that there is a fairly close association between these variables. For the decade following World War II, these regression lines provide fairly good predictions.

2. Of greater relevance is the fact that, in general, when a construction concept is used as the dependent variable, the regression coefficients are above the average significance of the regression relations tested in Table 1. The closer association makes possible predictions of above average accuracy.

3. The regressions of residential construction or starts on mortgage lending or debt in Table 2 are all significant and similarly suggest that there is a fairly close association between these variables for a period going back to the middle or late thirties.

4. The regressions of purchases by individuals on mortgage lending or debt, summarized in Table 3, provide predictions of slightly greater accuracy than those using construction activity or housing starts. This suggests that the degree of association between mortgage lending or debt and purchases, when the expenditure and the debt are classified by sectors, may be stronger than that between overall changes in mortgage lending or debt and changes in the housing stock.

5. Adding the discount rate, as a general index reflecting mortgage lending terms, gives a slight improvement. This suggests that it may be possible to improve the predictive power of the debt-expenditure hypothesis by adding an appropriate money market variable which more adequately reflects mortgage lending terms.[34]

6. The fairly close association between mortgage lending, or debt, and residential construction, or expenditure, in the past two decades does not, of course, prove that it will continue in the future. To answer this question we need further analysis of the determinants of debt.

7. As emphasized in the text, residential construction or expenditure is among the most favorable cases for testing the debt-expenditure hypothesis. The high correlations between mortgage lending or debt and residential construction or expenditure in the past two decades does not establish the validity of this hypothesis for other categories of capital expenditures.

8. In summary, we find that the relation between mortgage debt and residential construction or expenditure is fairly close. Subject to the qualifications just noted, these findings suggest that this relation may be used as a building block for linking monetary variables with residential construction in a more general model of income determination. We should, however, note that this more general model requires not only that we establish the debt-expenditure relations for other categories of capital expenditures, but also that we establish a second set of links—the links between total debt and monetized debt.

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thus lower β. On the other hand, if the rise in conventional financing was associated with a lowering of downpayments, the amount by which β falls is reduced and, if downpayments were lowered sufficiently, β could remain constant. It is therefore possible that in periods of monetary stringency, when the FHA and VA mortgage money tends to dry up and the proportion of conventional loans rises, that minimum downpayments on conventional loans, if not maximum maturities or interest rates, tend to ease.

[33] The multiple regression equation is:

$$E_3 = .462 + .738d_3 + .230X_3$$

where E_3 and d_3 are the expenditure and debt concepts defined above and X_3 is the discount rate. The standard errors,

$$s_{b_{E_3 d_3 \cdot X_3}} \text{ and } s_{b_{E_3 X_3 \cdot d_3}},$$

are 0.058 and 0.088, respectively; the partial correlations,

$$r_{E_3 d_3 \cdot X_3} \text{ and } r_{E_3 X_3 \cdot d_3},$$

92% and 43%.

The partial regression coefficient of X_3 is positive which goes counter to our theoretical expectation. It appears that the steady rise in interest rates following the low level of World War II, the growth in per capita income, and the post-war boom in residential housing dominate whatever inverse *ceteris paribus* relations there may be between interest rates and residential house purchases. But we do not wish to be dogmatic on this point since we are using a crude approximation to mortgage interest rates.

[34] To properly test this hypothesis we would presumably want to use lagged values of mortgage interest rates. But since the rediscount rate is a rough approximation to mortgage interest rates, such refinements did not seem to be justified.

APPENDIX

Table 1.

The revised estimates for GNP, gross private domestic investment, capital consumption allowances, net private domestic investment and new construction are given in the July 1958 issue of the *Survey of Current Business* (*SCB*). Estimates of total debt, public and private, both gross and net, are given in the May 1957 and May 1958 *SCB*. Since the debt data are as of the end of the calendar year, they were adjusted to reflect a July 1 date and are thus comparable, datewise, to the GNP estimates. Estimates of net private debt are given in the May 1957 and May 1958 *SCB*. Net private long term debt is defined as the sum of corporate long term debt and total mortgage debt; total mortgage debt is the sum of non-farm non-corporate mortgage debt and farm mortgage debt.

Estimates of gross investment in physical assets by the personal sector up to 1953 are given in table 6 of *National Income 1954 Edition* and, for later years, in the July 1957 *SCB*. Gross investment in physical assets is defined as the sum of non-farm dwellings, new construction by non-profit institutions, and the increase in inventories, the new construction, and the producers durable equipment of non-corporate enterprises including farm enterprises. To derive net investment in physical assets, we deduct the depreciation items, given in table 6, on non-farm dwellings and on the assets of non-corporate enterprises. The debt of the personal sector is defined as the sum of the mortgage debt of individuals, the bank debt and other net payables of non-corporate business, and the mortgage debt and other debt of farm enterprises. These data are given in table 6.

Gross investment in housing is defined as the dollar amount of investment in non-farm dwellings and is given in table 6. To derive the net investment we deduct depreciation on non-farm dwellings with a very minor adjustment, as done by Loughlin McHugh in "The Financial Position of Consumers," *SCB*, Dec. 1957, pp. 12–17. The non-farm mortgage debt owed by individuals to corporations and financial intermediaries, but net of the mortgage debt held by individuals, is also given in table 6.

Table 2.

Quarterly data on the dollar amount of 1–4 family activity and on changes in 1–4 family mortgage debt, both inclusive and exclusive of construction loans, are based on estimates from the Flow of Funds Accounts of the Federal Reserve Board (*FOFA*). Gross mortgage lending on 1–4 family houses is based on the series "non-farm mortgage recordings of $20,000 or less" prepared by the Federal Home Loan Bank Board; the two additional gross mortgage lending series, gross mortgage lending exclusive of other purposes and gross mortgage lending on new house purchases, are based on estimates of the Federal Reserve Board.

Quarterly data on the dollar amount of multifamily activity and changes in the multifamily mortgage debt outstanding are based on *FOFA* estimates.

Back data on new private residential building, including the dollar amount of new dwelling units, alterations and additions and non-housekeeping units, are given in *Construction Volume and Costs 1915–1956* (*CVC*) (supplement to *Construction Review*), table 2, and current data are given monthly in *Construction Review*, publication of Departments of Labor (BLS) and Commerce (BDSA).

Back data on annual changes in 1–4 family mortgage debt are given in the Housing and Home Finance Agency *Tenth Annual Report* (*HHFA*) (Washington, D. C., 1957), table A-24, p. 276, and current data are given monthly in the *Federal Reserve Bulletin*. Multifamily mortgage debt data are based on *FOFA* estimates. These estimates differ slightly from those given in table A-24, p. 276, of *HHFA*, which are being revised. Residential mortgage debt is the sum of 1–4 family and multifamily mortgage debt.

Estimates of new private non-farm permanent housing starts by type of structure are given in the *HHFA* report, table A-3, p. 267. The basic series going back to 1900 may be obtained from the Bureau of Labor Statistics. Prior to 1954 the private housing starts data are broken down by 1, 2, and multifamily structures. To derive estimates on 1–4 private starts for the years 1939–1953, we multiplied the number of 1- and 2-family starts for these years by 1.015—the ratio of 1–4 private starts to 1–2 private starts for the four year period 1954–1957.

Back data on the dollar amount of commercial

construction are given in *CVC* table 2, p. 3, and current data are given monthly in *Construction Review.* Commercial construction is defined as "office buildings and warehouses" and "stores, restaurants and garages." "Industrial building," "other non-residential building" and "public utilities construction" are excluded because these activities are typically financed in other ways and are not reflected in the commercial mortgage debt series. Data on commercial mortgage debt are based on *FOFA* estimates.

Back data on the dollar amount of farm construction are given in *CVC* and current data are given monthly in *Construction Review.* Farm construction is defined as the dollar amount of "operators dwellings" and "service buildings." Back data on farm mortgage debt are given in the September 1953 *SCB* and for later years in the May 1957 and May 1958 *SCB*; quarterly data are given in the *Federal Reserve Bulletin.*

Table 3.

Quarterly data on new 1–4 family house purchases by consumers are based on *FOFA* estimates. This is our E_1 series. To derive E_2 we add the *FOFA* estimates of land costs on these new houses and the estimated expenditures by the consumer sector on additions and alterations (excluding corporate and non-corporate expenditures). To derive E_3 we deduct depreciation on non-farm dwellings owned by persons from E_2. Revised data on depreciation comparable to those given in table 6 of the July 1957 *SCB*, which will appear in the Commerce Department's forthcoming bulletin, *U. S. Income and Output*, were obtained from the Office of Business Economics. To derive quarterly data on depreciation we used linear interpolation.

Quarterly data on net changes in the 1–4 family mortgage debt owed by consumers (net of construction loans) are based on *FOFA* estimates. This is our D_1 series. d_1, a quarterly series on gross mortgage lending on 1–4 family houses less other purposes is based on the semi-annual estimates of the Federal Reserve Board.

To derive d_2 we subtract gross construction loans from d_1. Gross construction loans were estimated as follows: (1) for each quarter we derive from *FOFA* data the ratio of change in construction loans to change in 1–4 family mortgage debt outstanding; (2) this ratio times gross mortgage lending on *new* house purchases is our quarterly estimate of gross construction loans.

d_3 is a quarterly series on gross mortgage lending on new house purchases derived from the semi-annual estimates of the Federal Reserve Board.

The discount rate at the New York Federal Reserve Bank is given in the *Federal Reserve Bulletin.* Data on the proportion of VA recordings to total recordings are given in HHFA's monthly publication *Housing Statistics.*

HOARDING, VELOCITY, AND FINANCIAL INTERMEDIARIES*

CHARLES F. HAYWOOD

University of Mississippi

Changes in the velocity of circulation of money have long been a source of vexation to the monetary authorities and to those who stress the significance that changes in the quantity of money may have for the behavior of total spending. Despite the many contributions in the way of measurement and analysis of changes in velocity,[1] the theory of velocity today falls somewhat short of providing an adequate explanation of the behavior of velocity in an economy with a highly developed financial structure. The purpose of this paper is to define a set of concepts and relationships upon which can be constructed, it is hoped, an adequate theory of velocity.

THE CONCEPT OF VELOCITY

The velocity of circulation of money is neither a mere number nor a mystical abstraction. It is a simple, observable fact that money changes hands as transactions are effected. In each transaction the quantity of money is equal to the number of units of goods, services, or nonmoney financial obligations involved in the transaction multiplied by the price per unit. As money, however, is not destroyed in the process of exchange, the same quantity of money can be used again and again to effect transactions. The number of times the total stock of money is used on the average to effect transactions in any period of time is the velocity of circulation of money. Despite the simplicity of the concept of velocity, differences of definition have developed. Two questions are basic. What types of transactions are to be regarded as pertinent? What is to be counted as making up the stock of money?

Definition of Transactions. In the transactions, or Fisherine, version of the quantity equation, transactions are taken to include purchases of all goods, services, and securities.[2] Denoting the total stock of money (yet to be defined) as M, and the total of *all* money outlays in a given period as E, transactions velocity can be defined symbolically as $V_t = E/M$. In the income version of the quantity equation, the definition of transactions is limited to money purchases of final products. Income velocity may be denoted accordingly as $V_y = Y/M$, where Y represents the total of money outlays for final-product (or "income") goods and services in a given period. A concept intermediate between transactions velocity and income velocity has often been distinguished by subtracting from total transactions all money outlays for financial items. That is, $V_n = N/M$, where N represents the total of nonfinancial transactions.[3]

Of these three concepts, transactions velocity is the most fundamental, as it is the broadest of the three concepts and the one that can be regarded as the conception of the actual economic phenomenon of the turnover of the total money stock. Moreover, it takes full account of financial transactions, and to be adequate the theory of velocity must be applicable to an economy with a highly developed financial system. On the other hand, nonfinancial velocity and income velocity have relevance for analyses of changes in the general level of commodity prices and employment. Fortunately, it is not necessary to choose among these three concepts for they are complementary. That is, $V_n = V_t\ (N/E)$, and $V_y = V_t\ (Y/E) = V_t\ (Y/N)\ (N/E)$. Indeed, an essential part of the theory of velocity

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[1] Richard T. Selden's "Monetary Velocity in the United States," *Studies in the Quantity Theory of Money* (Chicago: University of Chicago Press, 1951), pp. 179-257, provides an excellent survey of the literature; see, especially, his Table I.

[2] Irving Fisher, *The Purchasing Power of Money* (New York: Macmillan Company, 1911), pp. 184-97.

[3] Cf. R. G. Hawtrey, "Money and Index-Numbers," *The Art of Central Banking* (London: Longmans Green & Co., 1932), pp. 325-28; A. W. Marget, *The Theory of Prices* (New York: Prentice-Hall, 1938) I, pp. 576-600. With attention focused upon the level of prices of good and services, analysts have sometimes made use of the concept of "nonfinancial velocity" while giving the impression that the concept being used was Fisher's.

is an explanation of the economic significance of changes in the major types of transactions relative to total transactions. The theory of velocity should be concerned, therefore, with measuring and explaining changes in the ratios N/E and Y/N, as well as changes in V_t.[4]

Definition of Money. With respect to the second basic question posed, above, the main point at issue is whether time deposits should be included in the definition of money. The position taken in this paper is that time deposits should *not* be included in the definition of money, especially in analyses using the concept of velocity of circulation of money. It is the unique property of money that it is acceptable in exchange for all other assets, and it is this unique property that gives significance to the velocity of circulation of money as the conception of an actual economic phenomenon. If time deposits are included in the definition of money, the concept of velocity loses this significance and becomes a ratio relating money outlays to a selected group of liquid assets. This is not to say that a functional relationship of some kind cannot be found to explain and predict changes in this ratio and that this ratio may not have expository value, but such a ratio is not the velocity of circulation of money.[5]

Contrary to the opinion of Selden,[6] it is of importance analytically that the money stock not be defined to include time deposits. Changes in holdings of nonmoney liquid assets relative to the total quantity of means of payment are one of the ways in which the velocity of circulation of money is altered, as will be demonstrated presently. All highly liquid substitutes for holding money play much the same role in the determination of aggregate money outlays, so that for purposes of both theoretical analysis and policy formulation it is important that time deposits not be distinguished from other highly liquid substitutes for holding money, such as savings and loan shares, U. S. Savings Bonds, and Treasury bills. To include in the definition of money one type of substitute for holding money, i. e., time deposits, is to obscure part of the process by which changes in the velocity of circulation of money are effected. The definition of money should be restricted, therefore, to those things generally accepted as means of payment.[7]

THE CONCEPT OF HOARDING

The concept of the velocity of circulation of money has frequently been criticized as being "mechanical." What is meant, apparently, is that the concept does not get below the surface of economic processes as it does not deal directly with the decisions of individuals and other economic decision-making units. There is a conceptual link, however, between the surface phenomenon of velocity and the decisions of in-

[4] There is no reason to expect stability in the ratios N/E, Y/N, and Y/E. What evidence is available supports the conclusion that the volumes of financial transactions have varied both secularly and cyclically relative to total money outlays. Cf. Selden, *op. cit.*, pp. 215–31.

[5] It is true that one can speak of time deposits as having a rate of turnover, but time deposits turnover *against* money. In the same manner one can speak of the rate of turnover of inventories, U. S. Savings Bonds, used cars, or any other nonmoney asset. The turnover of money and the turnover of time deposits are obverse phenomena. It is regrettable that recent emphasis upon the store of value function of money has led to confusion about the definition of money. This confusion has been carried to the point where it has been suggested that money is anything generally used as a store of value *or* a medium of exchange. (Gordon W. McKinley, "The Federal Home Loan Bank System and the Control of Credit," *Journal of Finance*, September 1957, XII, pp. 319–32.) The distinction between money and other highly liquid assets should be clear. Money serves as a store of value *and* as a means of payment; certain other assets serve as a liquid store of value *but not also* as a means of payment. The line of analysis which argues that spending decisions are influenced by the size and composition of asset holdings does not require that all assets influencing spending decisions be defined as money. It simply requires that money be counted as a part of asset holdings.

[6] *Op. cit.*, p. 237.

[7] There remains, of course, the question of exactly what balances should be regarded as serving as means of payment. It is suggested that the following items should be counted as making up the total stock of money: total demand deposits, excluding "float" but including interbank and U. S. Government accounts; reserve balances of member banks; and, currency outside the Treasury and Federal Reserve Banks. All of these items find use in the effecting of total transactions and are relevant, therefore, to the measurement and analysis of transactions velocity.

dividuals and other economic units. This link is the concept of hoarding.

Definition of Hoards. Hoarding is one of those terms that must endure ambiguity due to its having both popular and economic meanings. It is unreasonable, however, that the term is used ambiguously in economic analysis. In an essay, "The Concept of Hoarding," in the *Economic Journal* of June, 1938, Mrs. Joan Robinson distinguished six (or more) senses in which the term had been used in "current literature" and found it necessary to add a postscriptum to include the Robertsonian concept of hoarding.[8] Little purpose would be served by reviewing Mrs. Robinson's exegesis of the uses of the term hoarding. The distinctness of each use, or sense, turns actually upon what is taken to constitute hoards.

The essential aspect of hoards is their time dimension, and it is this dimension that has not been put in proper perspective. At any moment of time, the total stock of money is equal to a certain number of days of total money outlays, given the current rate of money outlays per day. This can be generalized to say that hoards, expressed as a multiple of any arbitrary time period, are equal to the average stock of money in existence during the period divided by the volume of money outlays over the period. Hoards are thus given dimension in terms of the number of days, weeks, or months of money outlays to which money balances are equal. An act of hoarding lengthens this time dimension and an act of dishoarding shortens it.

One of the definitions of hoards found in most frequent use today is that of J. M. Keynes, who, in an apparent fit of literal-mindedness, argued that as all money is held by someone at any given moment, hoards should be defined as the total stock of money.[9] Keynes concluded that it is impossible for the public to increase or decrease its hoards, since the total stock of money is determined by the banking authorities. He thus banished the concept of hoarding, replacing it with the "propensity to hoard." A change in the propensity to hoard, subsumed under the liquidity preference function, was regarded by Keynes as working itself out through a change in the rate of interest rather than a change in the amount of hoards. However, Keynes' analysis implied that a change in the propensity to hoard is associated with a change in total money outlays, and, consequently, with a change in hoards when defined as the ratio of total money stock to total money outlays. Keynes need not have abandoned the concept of hoarding; the fact that he did can probably be attributed to his intransigence with regard to the quantity approach.

Another widely used definition of hoards is the "idle balances" concept developed in some detail by J. W. Angell[10] and H. S. Ellis.[11] When rigorously applied, this approach affords insight into the nature of decisions to hoard and dishoard, but it lends itself to misuse. Time deposits and other highly liquid substitutes for holding money have the appearance of being "idle balances," and some investigators have been led to regard them as such in order to fill the concept of idle balances with empirical content. This misapplication of the idle balances approach is probably rather common in classroom discussions and offhand analyses of hoarding, although it is clear enough in the analyses of Angell and Ellis that idle balances are *means of* payment held longer than "that maximum income expenditure period which is habitual or customary or 'normal' for the holder."

The ease of misapplying the Angell-Ellis concept of hoards is hardly sufficient grounds, however, for suggesting that it be abandoned, but it has other limitations. The idle balances approach does not lend itself to empirical application. At best it is a difficult task to obtain even rough estimates of idle balances.[12] Moreover, the "idleness" of money balances is after all a relative matter. A part of money balances is held for the purpose of making more immediate outlays and a part for more remote outlays. Yet, the idle balances approach classifies those money bal-

[8] *Collected Economic Papers* (New York: Augustus M. Kelley, 1951), pp. 62–68.

[9] *The General Theory of Employment, Interest, and Money* (New York: Harcourt, Brace & Co., 1936), p. 174.

[10] "The Components of the Circular Velocity of Money," *Quarterly Journal of Economics*, February 1937, LI, pp. 224–72.

[11] "Some Fundamentals in the Theory of Velocity," *Readings in Monetary Theory* (New York: Blakiston Company, 1951), pp. 89–128.

[12] J. W. Angell, *Investment and Business Cycles* (New York: McGraw-Hill Book Co., 1941), pp. 337–40.

ances held for making outlays on the last day of the "normal" income-expenditure period as active balances while classifying those money balances held for making outlays on the next day as idle balances.

What the Angell-Ellis type of analysis demonstrates is, of course, that hoarding is actually a slowing of the rate of use of money balances and dishoarding an increase in the rate of use of money balances. In this type of analysis, hoarding can be said to increase the average income-expenditure period and dishoarding to decrease it. (The "normal" income-expenditure period being fixed by payments customs, it is the size of the actual average income-expenditure that is affected by hoarding.) The concept of average income-expenditure period is central to the analyses of Angell and Ellis, for it is the link between changes in idle balances and changes in income velocity. Excepting the fact that money outlays in the Angell-Ellis analysis are restricted to income payments, this average expenditure period is the measure of hoards suggested in this paper. It is possible, therefore, to restate the Angell-Ellis approach with the average expenditure period representing the size of hoards. The division of money balances into active and idle balances becomes then one of the functional relationships that might be used to explain changes in the size of hoards. Whether it is more meaningful than other types of functional relationships that might be used to explain changes in hoards can be determined only through empirical study, and as noted above the use of the idle balances concept in empirical research has serious limitations.

In his very penetrating analysis of hoarding and dishoarding, D. H. Robertson regarded hoards as being measured by the ratio of money balances to income.[13] However, this definition did not always serve him well.[14] In instantaneous, aggregative analysis there is no point in distinguishing between income receipts and income payments, but in a period analysis tracing the movement of funds from one sector to another it is important to distinguish between income receipts and income payments. As hoarding has to do with a change in the rate of money outlays relative to money balances, hoards should be defined in terms of the money outlays rather than the money receipts of any group of holders of money balances. Such a definition would have served Robertson better than the one he used.

The Disaggregation of Velocity. When expressed in terms of the time units of total money outlays represented by total money balances, hoards are, of course, the reciprocal of transactions velocity as defined above. This is as it should be, for the connection between changes in hoards and changes in velocity should be unambiguous. It would be pertinent to ask, however, why it is at all necessary to define hoards if they are simply the inverse of transactions velocity. One reason for thus distinguishing hoards is convenience in terminology and exposition. An act of hoarding is expected to result in an increase in something called hoards and in a decrease in transactions velocity.

A more important reason for making use of the concept of hoards is that it provides a felicitous means of disaggregating the concept of velocity. In order to study the changes in velocity associated with the operations of particular groups of economic decision-making units, e.g., financial intermediaries, the concept of velocity must be disaggregated. The calculation of sector velocities is a means of achieving this disaggregation, but the concept of sector velocity does have a certain mechanical connotation which may account, in part, for the lack of attention this promising approach to velocity analysis has suffered. The inverse of sector velocity, however, is sector hoard, and the use of the variable "sector hoard," rather than sector velocity, facilitates the casting of velocity analyses in terms of demand functions for hoards. The connection between changes in velocity and individual

[13] "Saving and Hoarding," *Essays in Monetary Theory* (London: Staples Press, 1956), p. 67.

[14] A case in point is the controversy that developed over Robertson's conclusion that entrepreneurs hoarded when they sold securities in order to maintain their customary money outlays in the face of a reduction in their income. See *ibid.*, pp. 70–72; E. F. M. Durbin, *The Problem of Credit Policy* (New York: J. Wiley & Sons, 1935), pp. 249–54; Ellis, *op. cit.*, pp. 114–17. Robertson was mistaken in his conclusion, as demonstrated in footnote 17 below. That Robertson's analysis should have fallen into error in the treatment of financial transactions is ironical, because he stressed that the purchase of financial claims is spending just as is the purchase of goods and services.

choice, the touchstone of economic analysis, is thus made clear.

A SECTOR-MODEL APPROACH TO VELOCITY ANALYSIS

Five arithmetic models are summarized in Tables 1 and 2 to demonstrate how the concepts and relationships defined in this paper can be applied in the analysis of changes in the velocity of circulation of money.[15] The first four models, shown in Table 1, are so constructed that income is held constant. The purpose of this is to focus attention upon changes in transactions velocity and in the ratios of income transactions and purchases of goods and services to total money outlays. In the fifth model income is varied to demonstrate a type of cyclical fluctuation. The first two models are concerned with only a two-sector economy, the third model with three sectors, and the last two models with four sectors.

Model A. Let it be assumed that at the last stroke of midnight beginning the first day of a week of five days consumers receive from business $100 of income receipts. The $100 are in the form of inconvertible bank notes, which business firms have obtained sometime in the past by selling their notes of indebtedness to the bank of issue and which constitute the entire money stock. Consumers spend $20 for the products of business during the first day. For convenience in computation, it is assumed that this outlay is spread evenly over the 24-hour period. During the first day of the week the money balance of consumers is $90 and, as their money outlays are $20, their hoard is equal to 4.5 days. Continuing to spend $20 each day, consumers find their average money balance reduced to $70 on the second day, $50 on the third day, $30 on the fourth day, and $10 on the last day of the week. Their hoard correspondingly falls from 3.5 days on the second day to 0.5 day on the fifth and last day of the week. At the final stroke of midnight beginning the second week of five days the money balance of consumers is replenished by $100 of income receipts from business, and the second week is like the first, and so on.

While consumers dishoard from day to day within each week, business firms, which are the recipients of the daily outlays of individuals, hoard as they accumulate the necessary money balance to make income payments at the end of the week. During the first day, business firms have an average money balance of $10. As their anticipated outlays for the week are $100, the hoard of business firms on the first day is equal to 0.1 week, or 0.5 day. On the second day, the hoard rises to 0.3 week, or 1.5 days, and increases in this manner until the end of the week. The day-to-day dishoarding of consumers is offset by the day-to-day hoarding of business firms.

Table 1 shows that, for the week as a whole, consumers in Model A have money outlays of $100, an average money balance of $50, and a hoard equal to 0.5 week or 2.5 days. The same is true for business firms. The hoards for the entire system can be calculated either by taking the weighted average of the hoards of the sectors or by aggregating the money balances and money outlays of the sectors and dividing the former by the latter. Hoards in Model A are equal to 0.5 week and, correspondingly, transactions velocity is 2.0. As there are no financial transactions in Model A, outlays for goods and services are equal to total money outlays, and nonfinancial velocity is the same as transactions velocity. Measured by either final-product purchases or income payments, income in Model A is $100, the ratio of income transactions to total money outlays is 0.5, and income velocity is 1.0.

Each succeeding week in Model A is assumed to be exactly like the first week. Model A obviously represents a highly unlikely state of affairs, but it demonstrates the framework of the following models and provides a point of reference.

Model B. Whereas consumers spend all of their income receipts for consumption items in Model A, they spend only 80 per cent of the income received at the beginning of Week 1 in Model B for consumption items during the week. The balance is used to purchase financial claims issued by the business sector, which uses the funds thus obtained to acquire factor services

[15] These models are subject to many limitations, for they are severe abstractions, but these limitations do not impair the usefulness of the models to trace the effects upon velocity of changes in money flows among sectors. If this paper attempted to define the sector demand functions for hoards, the analysis would have to take into account some important variables that are ignored in the following models, such as interest rates and the price level.

to expand plant capacity.[16] There is a positive rate of saving in Model B both in the sense that consumers do not spend all of the money income earned during the previous period for consumption items and that they consume only a portion of current output. However, this positive rate of saving as compared with a zero rate of saving in Model A is not associated with any greater amount of hoarding in Model B than in Model A.[17]

Transactions velocity and income velocity in Model B have the same values as in Model A, as total money outlays, total money balances, and money income[18] are the same in both models. Nonfinancial velocity, however, is lower in Model B than in Model A, as total money outlays in Model B include some financial transactions. As shown in Table I, outlays for goods and services in Model B are equal to 0.9 of total money outlays, and nonfinancial velocity is 1.8. The difference in nonfinancial velocities in Model A and Model B illustrates the fact that due to variations in the ratios N/E and Y/N, nonfinancial velocity and income velocity can change without any change in hoarding.

[16] Increases in output associated with expanding plant capacity would imply, of course, a declining level of prices in Model B, but it can be assumed that costs also adjust so that incentives for continued plant expansion are not impaired.

[17] A comparison of Model A and Model B points up the error in Robertson's conclusion that entrepreneurs hoard when they sell securities to the public in order to maintain customary outlays in the face of reduced sales of goods and services. It is true that the ratio of money balances of business to its "income" receipts is higher in Model B than in Model A, but the ratio of money balances to money outlays of business is the same in both models. According to Robertson's own definition of hoards, i. e., the ratio of money balances to income, hoards in Model B are *not* greater for the system as a whole than in Model A. But with this definition the hoard of business is higher while the hoard of consumers is unchanged. Robertson's definition leads, therefore, to the erroneous conclusion that the sum of the parts is greater than the whole.

[18] Measured by final-product outlays money income in Model B is equal to $80 of outlays for consumption items by the consumer sector plus $20 of outlays for (net) investment items by the business sector. The income payments of business at the end of the week are the same in both models.

Model C. Consumers in Model C begin Week 1 with $100 of income receipts as in the previous models, but during Week 1 consumers spend only 80 per cent of this on consumption items and hold the balance in the form of bank notes. The average money balances of consumers over the five-day week is $60, and with money outlays at $80 the hoard of the consumer sector equals 0.75 week. It is assumed that the bank of issue is committed to a policy of maintaining aggregate money income constant and purchases from the business sector $20 of financial obligations in order that the income payments of business can be maintained at the customary level. For the sake of convenience in computation it is assumed that the bank of issue spreads its purchases evenly over the five-day week. The money balances of business average $50 for the week, money outlays at the end of the week are $100, and the average hoard over the week is equal to 0.5 week.

In Week 2 and Week 3 consumers continue to spend only 80 per cent of their money income received at the beginning of the week. The bank of issue also continues its policy of purchasing enough debt of business to maintain aggregate money income constant. As shown in Table I the hoard of consumers rises to 1.0 week in Week 2 and to 1.25 weeks in Week 3. The hoard of the business sector remains constant in each week. The bank of issue has no hoard, as no reserves are held against the inconvertible bank notes it issues.

Over Week 1 total money balances average $110, total money outlays are $200,[19] and hoards are 0.55 per week. Hoards rise in Week 2 and Week 3, due to the hoarding of consumers, and correspondingly transactions velocity declines. As shown in the lower part of Table I, nonfinancial velocity and income velocity decline proportionately with transactions velocity, for the ratios N/E and Y/E remain the same from week to week. The action of the bank of issue increasing the money stock offsets these declines in velocities so far as total money outlays, purchases of goods and services, and money income are concerned.

Model D. In Model D consumers also spend

[19] The acquisition of debt by the bank of issue is included in total money outlays and hence in the computation of hoards and gross velocity, although the hoard of the bank of issue is zero.

only 80 per cent of their available money income for consumption items, but instead of holding the balance in the form of bank notes consumers use it to acquire claims against savings intermediaries. It is assumed that during each day $16 are spent for consumption items and $4 for savings shares. Total money outlays of consumers are, therefore, $100 over the five days of Week 1, their average money balances are $50 for the week, and their hoard is 0.5 per week.

Savings intermediaries are assumed to hold a cash reserve equal to five per cent of their share liabilities at any one time and to lend to the business sector the balance of the funds received each day. In Week 1 savings intermediaries make outlays of $19 for the debt issues of business, have an average money balance of $0.50, and a hoard of 0.03 week. The bank of issue, pursuing its policy of holding aggregate money income at a constant level, purchases $1 of the debt of business during Week 1.

This same pattern of money flows is repeated in Week 2 and Week 3. It can be seen from Table I that the hoards of consumers and business do not change from week to week, but the reserve requirement of savings intermediaries results in a slight rise in their hoard from week to week. The effect that this rise might have upon money outlays, purchases of goods and services, and money income is offset by the small increase in the stock of money each week.

Total money outlays in each week of Model

TABLE I

SUMMARIES OF MODELS A, B, C AND D

	Model A	Model B	Model C			Model D		
	Week 1, etc.	Week 1, etc.	Week 1	Week 2	Week 3	Week 1	Week 2	Week 3
Consumers								
Outlay, Total	100.00	100.00	80.00	80.00	80.00	100.00	100.00	100.00
On Consumption	(100.00)	(80.00)	(80.00)	(80.00)	(80.00)	(80.00)	(80.00)	(80.00)
On Claims	—	(20.00)	—	—	—	(20.00)	(20.00)	(20.00)
Money Balance	50.00	50.00	60.00	80.00	100.00	50.00	50.00	50.00
Hoard (in weeks)	0.50	0.50	0.75	1.00	1.25	0.50	0.50	0.50
Business								
Outlay	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Money Balance	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00
Hoard (in weeks)	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
Bank of Issue								
Outlay	—	—	20.00	20.00	20.00	1.00	1.00	1.00
Savings Intermediaries								
Outlay	—	—	—	—	—	19.00	19.00	19.00
Money Balance	—	—	—	—	—	0.50	1.50	2.50
Hoard (in weeks)	—	—	—	—	—	0.03	0.08	0.13
Reserves (end of week)	—	—	—	—	—	1.00	2.00	3.00
Shares (end of week)	—	—	—	—	—	20.00	40.00	60.00
Money Balances, M	100.00	100.00	110.00	130.00	150.00	100.50	101.50	102.50
Money Outlays, E	200.00	200.00	200.00	200.00	200.00	220.00	220.00	220.00
Hoards, $H = M/E$	0.50	0.50	0.55	0.65	0.75	0.457	0.461	0.466
Transactions Velocity ($V_t = E/M$)	2.00	2.00	1.82	1.54	1.33	2.189	2.167	2.146
Goods and Services, N	200.00	180.00	180.00	180.00	180.00	180.00	180.00	180.00
N/E	1.00	0.90	0.90	0.90	0.90	0.818	0.818	0.818
Nonfinancial Velocity, V_n ($V_n = V_t \cdot N/E$)	2.00	1.80	1.64	1.38	1.20	1.791	1.773	1.756
Income, Y	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Y/E	0.50	0.50	0.50	0.50	0.50	0.454	0.454	0.454
Income Velocity, V_y ($V_y = V_t \cdot Y/E$)	1.00	1.00	0.91	0.77	0.67	0.995	0.985	0.976

D are greater than in the previous models, as the channeling of a part of consumer spending through savings intermediaries results in a higher volume of financial transactions due to the fact that two sets of exchanges are involved in moving lendable funds from consumers to business. This greater volume of money outlays is associated with a lower level of hoards and a higher transactions velocity than in the previous models. However, after financial transactions are netted out through the application of the ratio N/E, it is seen that non-financial velocity is raised above the level of values prevailing in Model C but remains below the values in Model A and Model B. The same comparison is true for income velocity.

Model D demonstrates the essential quantitative effect of the intermediation of savings institutions. An increase in the liabilities of savings intermediaries tends to raise the value of the velocity of circulation of money above the level that would prevail if spending units had preferred to increase their hoards rather than their holdings of savings shares. Because savings intermediaries can also be expected to hold hoards, nonfinancial and income velocities are not raised, however, to the same extent as would be the case if spending units preferred to increase their holdings of primary debt rather than add to their holdings of savings shares.[20]

That both Model C and Model D show declining trends in velocity, regardless of which of the three concepts is used, is an interesting comment on the contention that the secular trend of velocity has actually been a declining one.[21] The need of financial institutions to maintain cash reserves in a more or less fixed ratio to a rising total of liabilities lends support to the argument that the secular trend of velocity is a declining one. In Model D, however, the decline in velocity is somewhat slower than in Model C. The implication is clear that the degree of savings intermediation is one of the important determinants of the rate of secular decline of velocity.[22] Although with any degree of savings intermediation a declining secular movement in velocity is a reasonable expectation, upward shifts in the degree of savings intermediation, such as illustrated by a comparison of Model C and Model D, could offset the forces making for a declining trend. Velocity could show, therefore, a stable or rising trend of some duration, depending upon the magnitude and timing of the shifts in the degree of savings intermediation. Moreover, as a result of changes in preferences for holding money and its substitutes, increases in velocity could occur as part of cyclical variations around a declining trend. It is to an example of such a cyclical variation that the discussion now turns.

Model E. The first two weeks of Model E are identical with the first two weeks of Model C. Consumers hold the saved portion of available money income in the form of cash, and the bank of issue creates new money to offset this hoarding. Income is the same in these two weeks, hoards for the system as a whole rise, and velocity declines.

In Week 3 of Model E the intermediation of savings institutions is introduced and consumers use the saved portion of available money income to acquire $20 of savings shares. After deducting $1 of required reserves, savings intermediaries lend $19 to the business sector. The bank of issue, seeking to maintain income constant, reduces its purchases of business debt to $1. Hoards, on balance, decline slightly from Week 2 to Week 3. Although transactions velocity thus rises slightly, nonfinancial velocity and income velocity continue to fall in Week 3, for the ratios N/E and Y/E fall in Week 3. However, the declines in nonfinancial velocity and income velocity are smaller than would have occurred if

[20] This demonstration of the essential quantitative effect of the intermediation of savings institutions affords some insight into the work of John G. Gurley and Edward S. Shaw, "Financial Aspects of Economic Development," *American Economic Review*, September 1955, XLV, pp. 515–38; "Financial Intermediaries in the Saving-Investment Process," *Journal of Finance*, May 1956, XI, pp. 257–76; "The Growth of Debt and Money in the United States, 1800–1950: A Suggested Interpretation," *Review of Economics and Statistics*, August 1957, XXXIX, pp. 250–62. In the first article noted here, Gurley and Shaw explicitly put aside the velocity approach as inadequate, but compare the lucid and cogent statement in velocity terms made by Gurley in "Agenda for a National Monetary Commission—Discussion," *American Economic Review*, Papers and Proceedings, May 1958, pp. 103–105.

[21] Cf. Selden, *op. cit.*, pp. 187–91.

[22] Cf. Gurley and Shaw, "The Growth of Debt and Money in the United States, 1800–1950: A Suggested Interpretation," *op. cit.*, p. 261.

TABLE II

SUMMARY OF MODEL E

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7
Consumers							
Outlay, Total	80.00	80.00	100.00	120.00	138.00	135.82	134.46
On Consumption	(80.00)	(80.00)	(80.00)	(80.00)	(94.40)	(108.66)	(107.57)
On Claims	—	—	(20.00)	(40.00)	(43.60)	(27.16)	(26.89)
Money Balance	60.00	80.00	90.00	80.00	69.00	67.91	67.23
Hoard (in weeks)	0.75	1.00	0.90	0.67	0.50	0.50	0.50
Business							
Outlay	100.00	100.00	100.00	118.00	135.82	134.46	133.12
Money Balance	50.00	50.00	50.00	59.00	67.91	67.23	66.56
Hoard (in weeks)	0.50	0.50	0.50	0.50	0.50	0.50	0.50
Bank of Issue							
Outlay	20.00	20.00	1.00	—	—	—	—
Savings Intermediaries							
Outlay	—	—	19.00	38.00	41.42	25.80	25.55
Money Balance	—	—	0.50	2.00	4.09	5.86	7.21
Hoard (in weeks)	—	—	0.03	0.05	0.10	0.23	0.28
Reserves (end of week)	—	—	1.00	3.00	5.18	6.54	7.88
Shares (end of week)	—	—	20.00	60.00	103.60	130.76	157.65
Money Balances, M	110.00	130.00	140.50	141.00	141.00	141.00	141.00
Money Outlays, E	200.00	200.00	220.00	276.00	315.24	296.08	292.13
Hoards, $H = M/E$	0.55	0.65	0.64	0.51	0.45	0.476	0.484
Transactions Velocity ($V_t = E/M$)	1.82	1.54	1.56	1.96	2.24	2.10	2.07
Goods and Services, N	180.00	180.00	180.00	198.00	230.22	243.12	240.69
N/E	0.90	0.90	0.818	0.717	0.730	0.821	0.824
Nonfinancial Velocity, V_n ($V_n = V_t \cdot N/E$)	1.64	1.38	1.28	1.40	1.64	1.72	1.70
Income, Y	100.00	100.00	100.00	118.00	135.82	134.46	133.12
Y/E	0.50	0.50	0.454	0.428	0.431	0.454	0.456
Income Velocity, V_y ($V_y = V_t \cdot Y/E$)	0.91	0.77	0.71	0.84	0.96	0.95	0.94

consumers had added to their liquid assets by increasing hoards rather than increasing their holdings of savings shares, as can be seen by comparing Week 3 of Model E with Week 3 of Model C.

Let it be assumed that for some reason or another consumers in Week 4 draw down their cash balances by purchasing \$40 of savings shares instead of limiting their purchases to the saved portion of available money income. After deducting required reserves, savings intermediaries have \$38 to lend to the business sector. It is assumed that there is some set of terms on which the \$38 can be loaned to business as a net addition to their indebtedness. Income payments of business rise accordingly to \$118 at the close of Week 4, as shown in Table II. The bank of issue fails to take action to restrain this rise in money income because of an assumed reluctance to contract the stock of money.[illegible] Increases in money outlays and income are thus facilitated by the dishoarding of consumers through the purchase

[illegible] The bank of issue could decrease the stock of money by calling in loans previously made to the business sector and/or selling a part of its holdings of business debt to savings intermediaries. It is not unrealistic to assume that the bank of issue would simply hold the line against further increase in the quantity of money rather than forcing a contraction. The monetary authorities have a well observed reluctance to act so forcefully as to contract the money supply, and this reluctance has probably been strengthened at times by the notion that any increase in the obligations of savings intermediaries represents an "increase in thrift."

of savings shares. With the decline in hoards, transactions velocity rises sharply in Week 4, and nonfinancial velocity and income velocity also increase despite the declines in the ratios N/E and Y/E.

In Week 5 consumers again draw down their money balances by purchasing \$20 of savings shares in addition to acquiring \$23.60 of such shares with the saved portion of available money income. (It is assumed throughout Model E that consumers spend 80 per cent of available money income on consumption items.) The flow of lendable funds in Week 5 rises above the amount available in Week 4, and with consumption outlays also rising the business sector can be expected to become more expansion minded. Income payments of business rise to \$135.82 at the end of Week 5, as compared with \$100 at the end of Week 3.

By the end of Week 5, however, consumers have depleted their capacity to dishoard, and purchases of savings shares in Week 6 are limited to the saved portion of available money income, which is \$27.16. The flow of lendable funds to the business sector is, therefore, sharply reduced in Week 6. At the same time, the business sector finds consumption outlays greater than in any previous week. With such a favorable trend in consumption expenditures, business firms would presumably show an increase in their demand for lendable funds. The interaction of a downward shift in the supply of lendable funds and an upward shift in the demand for such funds would produce the rise in interest rates that is typical of the final stages of a cyclical upswing.[34]

Income payments at the end of Week 6 are lower than at the end of Week 5. Accordingly, consumption outlays decline in Week 7, and a cyclical downswing is underway. The volume of lendable funds is further reduced in Week 7 due to the lower dollar amount of saving associated with the lower level of money income and also because of the diversion of 5 per cent of the dollar amount of saving into the required reserve balances of savings intermediaries. Income payments decline further in Week 7 and will continue to decline unless the bank of issue takes steps to bring the decline in the volume of lendable funds to an end. Any secondary effects of a depressive nature generated by the change of prospects from rising income levels to falling income levels will, of course, complicate the problem of halting the decline in income.

If the bank of issue were to step in quickly in Week 6 to hold income payments at the level of Week 5, thereby attempting to forestall the development of depressive secondary effects, the bank would have to validate any increases in prices and wages occurring in Week 4 and Week 5. If consumers then set about rebuilding their hoard to, say, the level of Week 2, the stage would soon be set for another upward surge. The familiar "ratchet" of income and prices of the postwar period could thus be demonstrated by extending Model E with alternating periods of hoarding and dishoarding.[35]

In Week 7 the velocity of circulation of money, using any of the three measures, is higher than in Week 1, although Model E contains the necessary conditions for velocity to show a declining secular trend. An extension of Model E following the pattern of money flows of Week 7 could generate such a declining trend. The shift of preference of consumers from hoards to savings shares more than offsets the forces making for a declining trend in part of Model E, and a kind of cyclical variation in velocity is the result of the combination of this shift and the forces making for a declining trend.

SUMMARY AND CONCLUSION

The quantity approach continues to be a widely used conceptual framework, especially in matters of monetary policy. The power of the quantity approach as an expository and predictive device could be considerably enhanced by further study of the nature and causes of changes in the velocity of circulation of money. This paper has suggested that it would be useful to distinguish three concepts of velocity—transactions velocity, nonfinancial velocity, and income velocity—and that it is important analytically to restrict the definition of money in

[34] Model E provides an interesting note to the argument that the boom comes to an end because of a "shortage of working capital." See Gottfried Haberler, *Prosperity and Depression* (New York: United Nations, 1946), pp. 48–57, 75–79, 127–37, 367–68.

[35] Implicit in Model E and in the other models are various patterns of debt expansion. These patterns throw some light on the financial aspects of income determination, but an adequate analysis of these aspects would unduly lengthen this paper.

these concepts to means of payment, rather than including any type of substitute for holding money.

The concept of hoarding links the phenomenon of velocity with the decisions of economic units. The definition of hoards suggested in this paper —the number of time units of money outlays held in the form of money balances—has several advantages. It makes clear the time dimension of hoarding. It can be used in the analysis of financial transactions as well as exchanges of goods and services and income transactions. It facilitates a sector approach to velocity analysis.

Changes in transactions velocity, other than those associated with alterations of payments customs, must come from the decisions of holders of money balances to hoard or dishoard. Changes in nonfinancial velocity and income velocity depend upon changes in transactions velocity and in the ratio of expenditures for goods and services to total money outlays and the ratio of final-product purchases to total money outlays, respectively. Hoards can be increased (decreased) through reductions (increases) in money outlays for goods and services and debt issues, including the nonmoney, but highly liquid, debt of financial intermediaries. An example of a change in hoards associated with a change in money outlays for goods and services is provided by a comparison of Model A and Model C. A change in hoards associated with a change in money outlays for the direct debt of spending units is illustrated by Model B and Model C. A comparison of Model C and Model D shows a change in hoards associated with a change in money outlays for the indirect debt of financial intermediaries. A declining secular trend for the velocity of circulation of money is consistent with Model C and Model D, while Model E demonstrates the possibility of cyclical variations in velocity. Coping with the apparently many possible variations of this sort poses an obvious challenge for monetary policy.

CHARACTERISTICS OF NONPAR BANKS: A CASE STUDY

CLIFTON H. KREPS, JR.

University of North Carolina

A nonpar bank is one that levies an "exchange" charge on checks drawn on it and presented to it through the mails for payment; thus it fails to "remit at par" or pay the full face value of all checks drawn on it.[1] Over ten per cent of the nation's banks are nonpar banks, but the more than 1700 nonpar banks in the country are not uniformly distributed geographically. Instead they are concentrated in the mid-Northwest (Minneapolis and St. Louis Federal Reserve Districts) and in the Southeast (Atlanta and Richmond Federal Reserve Districts).

Nonpar banks exist in only 19 of the 48 states, and in only 12 states (and four Federal Reserve Districts) do they constitute as much as 10 per cent of total banks. But these 12 states contain 94 per cent of the nation's nonpar banks and in these states, as Table I shows, nonpar banks as a proportion of total banks range from a low of about one-sixth in Florida to a high of almost three-fourths in Mississippi. Similarily, the four Federal Reserve Districts encompassing these 12 states show proportions of nonpar to total commercial banks ranging from one-sixth in the Richmond District to almost one-half in the Minneapolis District.

In earlier times, when banks were fewer in number, population centers few and far apart, transportation facilities undeveloped, and considerable time and expense were necessary to transport funds from one part of the country to another, most banks levied exchange charges on checks presented to them through the mails for payment. As banks increased in number, as population centers multiplied, and as transport facilities improved, it became possible to settle balances through the medium of bank drafts, without shipping currency. Thus the level of exchange charges declined and the practice of charging exchange began to be abandoned. Between 1916 and 1923, moreover, the Federal Reserve System actively worked to eliminate nonpar banking, and since 1923 has refused to permit nonpar checks to be collected through Federal Reserve channels.[2]

As a result of these factors, nonpar banks, which as late as 1918 constituted over a third of the 29,000 commercial banks then in existence, have steadily declined in number. At the end of 1957, for example, there were but 1741 nonpar banks, roughly 13 per cent of total commercial banks but operating less than 10 per cent of the nation's total banking offices.

As indicated, however, these nonpar banks are highly concentrated in 12 states in four Federal Reserve Districts. In these areas, nonpar banks constitute a significant fraction of total commercial banks, and nonpar checks constitute a substantial part of the total volume of checks handled by banks. It has been estimated, for example, that while only about four per cent of all checks handled by banks are nonpar checks, the proportion of nonpar checks to total checks handled ranges from over five per cent (one check in every 20) in the Richmond Reserve District, to over 11 per cent (one check in every 10) in the St. Louis District, up to 20 per cent (one check in every 5) in both the Atlanta and Minneapolis Districts. And banks of these four Districts combined handle over 80 per cent of the nonpar checks handled by all banks.[3]

[1] As an example, a check for $1,000.00 drawn on a nonpar bank, deposited in another bank by the person receiving it, and forwarded through normal collection channels (i.e., by mail) to the nonpar bank on which it was drawn, might be paid by a remittance of $998.75, with the nonpar bank retaining $1.25 (1/8 of 1 per cent) as an exchange charge. Exchange charges of nonpar banks vary from state to state and, within some states, from bank to bank, ranging from a low of 1/10 of 1 per cent to a high of 1/4 of 1 per cent. See *Par and Rate List for Collecting Checks, Drafts, Notes, Etc.*, Wachovia Bank and Trust Company, Winston-Salem, North Carolina. Corrected to May 1, 1957.

[2] See George B. Vest, "The Par Collection System of the Federal Reserve Banks," *Federal Reserve Bulletin*, February 1940, pp. 89-96.

[3] See *Study of the Check Collection System*. Report of the Joint Committee on the Check Collection System to the American Bankers Association, Association of Reserve City Bankers, and Conference of Presidents of the Federal Reserve Banks. June 15, 1954, p. 86.

TABLE I

TOTAL COMMERCIAL BANKS AND NONPAR BANKS, BY FEDERAL RESERVE DISTRICTS AND STATES WHERE NONPAR BANKS CONSTITUTE TEN PERCENT OR MORE OF TOTAL BANKS, AS OF DECEMBER 31, 1957*

	Total Banks		Total Banking Offices	Nonpar Banks		Nonpar Banking Offices	% of Nonpar to Total	
	Banks	Branches And Offices		Banks	Branches And Offices		Banks	Banking Offices
Federal Reserve Districts								
Richmond	978	963	1,941	162	149	311	16.56	16.02
Atlanta	1,312	408	1,720	575	51	626	43.82	36.39
St. Louis	1,467	256	1,723	300	73	373	20.45	21.65
Minneapolis	1,290	123	1,413	599	43	642	46.43	45.43
States								
Alabama	239	60	299	92	1	93	38.49	31.10
Arkansas	237	29	266	111	20	131	46.83	49.25
Florida	261	13	274	45	1	46	17.24	16.79
Georgia	412	69	481	279	2	281	67.71	58.42
Louisiana	182	141	323	106	27	133	58.24	41.18
Minnesota	682	6	688	401	—	401	58.79	58.28
Mississippi	195	115	310	145	69	214	74.36	69.03
North Carolina	198	387	585	89	143	232	44.95	39.66
North Dakota	154	26	180	97	19	116	62.99	64.44
South Carolina	144	110	254	71	6	78	49.30	30.71
South Dakota	172	53	225	101	24	125	58.72	55.55
Tennessee	296	168	464	83	17	100	28.04	21.55

* Source: *Federal Reserve Bulletin*, February, 1958, p. 203.

The existence of a sizeable concentration of nonpar banks (and consequently of nonpar checks) in the mid-Northwestern and Southeastern regions of the country poses an economic problem for these areas in that the practice of nonpar banking limits the usefulness of demand deposits as money, since nonpar banks will not pay the full face value of all checks drawn on them. The large volume of nonpar checks also poses a problem to the banking system in these areas, since nonpar checks cannot travel through usual (i.e., Federal Reserve) check collection channels,[4] but require a separate set of (correspondent bank) channels for their collection. This duplicate set of channels is expensive to maintain; par-remitting bankers estimate, for example, that it costs several times as much to collect a nonpar check as a par check.[5]

Nonpar bankers argue that there is nothing illegal about exchange charges in the states where they are levied, that the exchange charge is a payment for the service of transmitting funds to distant places,[6] and that nonpar banks need the income that exchange charges provide. But these arguments really cast little light on the fundamental questions of why nonpar bankers persist in relying on an income source—exchange charges—that most of the nation's banks have long since foregone, how nonpar banks are able to continue levying exchange charges when most of the nation's banks no longer levy such charges, and what circumstances explain the fact that the remaining nonpar banks of the country are so

[4] See Regulation J ("Check Clearing and Collection") of the Board of Governors of the Federal Reserve System. In addition to refusing to accept nonpar items for collection, the Federal Reserve System also prohibits its member banks from charging exchange themselves and from absorbing exchange charges levied by other banks.

[5] *Study of the Check Collection System*, p. 88.

[6] Nonpar banks will pay the full face value of checks drawn on them that are presented over their counters for payment; the exchange charge is levied only on checks presented for payment through the mails.

TABLE II

DISTRIBUTION OF NORTH CAROLINA COMMERCIAL BANKS BY DEPOSIT SIZE AND PAR REMITTING STATUS, AS OF DECEMBER 31, 1956*

Deposit size (millions of $)	All Banks		Par Remitting		Nonpar		Per cent of Nonpar to All Banks
	No.	Per cent	No.	Per cent	No.	Per cent	
Under 1	18	8	8	7	10	10	56
1-2	45	21	13	10	32	34	71
2-5	70	33	37	32	33	35	47
5-10	42	20	31	26	11	12	26
10-25	25	12	22	18	3	3	12
25-50	7	3	3	3	4	4	57
Over 50	7	3	5	4	2	2	29
	214	100	119	100	95	100	44

* Source: *Par and Rate List* of Wachovia Bank and Trust Company; *Polk's Bank Directory*; 1956 *Annual Report* of the North Carolina Banking Commissioner.

TABLE III

DISTRIBUTION OF NORTH CAROLINA COMMERCIAL BANKS BY SIZE (POPULATION) OF HEAD OFFICE LOCATION, DECEMBER 31, 1956*

Population of Head Office Town	All Commercial Banks		Par-remitting Banks		Nonpar Banks		Per Cent Nonpar to Total
	No.	Per Cent	No.	Per Cent	No.	Per Cent	
Under 1,000	46	21	4	3	42	44	91
1,000-5,000	67	32	23	19	45	47	65
5,000-10,000	30	14	26	22	4	4	13
10,000-25,000	35	16	32	27	3	4	8
25,000-50,000	10	5	9	88	1	1	10
50,000-100,000	19	9	19	15	—	—	—
Over 100,000	7	3	7	6	—	—	—
	214	100	120	100	95	100	

* Sources: *Polk's Bank Directory* and 1956 *Annual Report* of the North Carolina Banking Commissioner (head office locations); *Par and Rate List* of Wachovia Bank and Trust Co. (par-remitting status); Rand-McNally *World Atlas* (population data of 1950 census).

highly concentrated geographically? These are the questions to which the present brief study addresses itself.

The approach employed is that of studying the nonpar banks of a typical nonpar banking state—in this case, North Carolina[7]—to see if nonpar banks have any common characteristics, and to see whether these characteristics may help to explain why nonpar banks continue to thrive in some places. The characteristics selected for study are: size, location, competitive status, and ratio of earning assets to total assets.

SIZE OF NONPAR BANKS

As of December 31, 1956, there were 214 commercial banks in North Carolina. Of these, 88 banks operated a total of 355 branches.[8] All these banks had total assets of $2,756,052,398.69.[9] On the same date, there were 95 nonpar banks in North Carolina. Of these nonpar banks, 30 operated 142 branches (21 of which were par-remitting branches). The nonpar banks had total assets of $821,688,661.[10]

Thus at the end of 1956, nonpar banks constituted 44 per cent of all commercial banks in North Carolina, operated 40 per cent of the branches operated by all commercial banks in the state, and owned 30 per cent of the state's banking assets. These data suggest a hypothesis about nonpar banks—that they tend to be smaller than par-remitting banks. Confirmation of this hypothesis is supplied by Table II, which distributes North Carolina banks by size of de-

[7] States are the largest geographic unit for which any detailed data on nonpar banking exist. Such data are not available either regionally or nationally. North Carolina was chosen for the present study because data on nonpar banking in North Carolina are reasonably good, and North Carolina seems a reasonably typical nonpar banking state.

[8] In this respect, North Carolina is not completely typical of the 12 states where nonpar banks constitute 10 per cent or more of total banks. North Carolina is one of only three of these states (the others being South Carolina and South Dakota) that permit state-wide branch banking. Of the remaining nine, seven permit limited-area branch banking and two prohibit branch banking entirely. See *Compilation of Federal and State Laws Relating to Branch Banking in the United States*, Board of Governors of the Federal Reserve System, Washington, July 1, 1951.

[9] *Annual Report of the Commissioner of Banks for the State of North Carolina*, for the year ended December 31, 1956; and *Federal Reserve Bulletin*, April 1957, pp. 472–3.

[10] Individual nonpar bank data summarized from *Polk's Bank Directory*, 125th ed. (R. W. Polk and Co., Nashville, Tennessee, March 1957).

posits. The table indicates that while almost two-thirds (62 per cent) of North Carolina's banks have deposits of less than $5 million, only half (49 per cent) of the par-remitting banks are this small, while this size-group includes over three-fourths (79 per cent) of the nonpar banks.[11]

LOCATION OF NONPAR BANKS

As a corollary of the proposition that nonpar banks tend to be smaller than par-remitting banks, the hypothesis may be advanced that nonpar banks are typically "small town" banks, and that they tend to be located in smaller towns than par-remitting banks.[12] This hypothesis also tests true for North Carolina, as Table III shows.

Over 90 per cent of the state's nonpar banks are in towns of less than 5,000 population, while less than a quarter of the par-remitting banks are found in places this small. Conversely, 21 per cent of the par banks are in cities of 50,000 population or more; there are no nonpar banks in places this large. Finally, 57 per cent of the par banks are located in towns and cities of 5,000 to 50,000 population, but less than 10 per cent of the nonpar banks are in places as large as this.

Looked at another way, over nine-tenths of the banks in places of less than 1,000 population are nonpar banks, as are two-thirds of the banks in places of 1,000 to 5,000 population. But only one-tenth of the banks in cities of 5,000 to 50,000 population are nonpar banks, and there are no nonpar banks in cities of 50,000 or more.

COMPETITION BETWEEN PAR AND NONPAR BANKS

It is unusual for a nonpar bank to be located in the same town with a par-remitting bank. Apparently, competition with a par-remitting bank in the same town places almost irresistible pressure on the nonpar bank to become par-remitting also.[13]

At the end of 1956, the 95 nonpar banks in North Carolina operated 142 branches, for a total of 237 banking offices of nonpar banks. With respect to competition with par-remitting banks, these were located as follows: Twenty-seven of these offices were par-remitting; and these par-remitting offices included 6 head offices of banks operating nonpar branches and 21 branches of otherwise nonpar banks. Twenty-two of these par-remitting offices—the 6 head offices and 16 of the branches—were located in towns having one or more other par-remitting banking offices. The remaining 5 par-remitting branches of nonpar banks were the only banking offices in the towns they served.[14]

Nine of the nonpar banking offices were located in towns with one or more other banking offices that did remit at par.[15] The vast majority, however—193, or over 80 per cent of the nonpar banking offices—were the only banking offices in the towns in which they were located.

Thus, of the total of 237 banking offices of nonpar banks in North Carolina at the end of 1956, only 31, or 13 per cent, competed with par-

[11] On the other hand, nonpar banks do "grow bigger" in North Carolina than in some other places, because statewide branch banking is permitted. While only a fourth (20 of 81) of the state's banks with deposits of $5 million or more are nonpar, and only a fourth (9 of 39) of the banks with deposits of $10 million or more are nonpar, almost half (6 of 14) of the banks with deposits of $25 million or more are nonpar banks. In fact, four of the ten largest banks in the state are nonpar banks. These larger nonpar banks operate numerous branches (some of which are par-remitting), and some of them conduct in addition an extensive correspondent banking business, specializing in the collection of checks on other nonpar banks.

[12] There is generally a high positive correlation between size of banks and size of towns that banks are located in. That is, large banks are not typically found in small towns. In states where statewide branch banking is permitted, they sometimes are, however, if one assumes that branch systems are "located" in the towns where their head offices are found. North Carolina's largest nonpar bank, for example, which has deposits of close to $200 million and operates a large number of branches (some of which are par-remitting), has its head office in a town of less than 10,000 population.

[13] For one thing, it provides a "par point" in the town to which correspondent banks can send checks on the nonpar bank for direct presentation, thus avoiding the nonpar bank's exchange charge on items it receives through the mails.

[14] Pressure on the branches from important customers (e.g., large industrial plants) in these five towns may explain this peculiar situation. As a result of such pressures, some nonpar banks are said to remit at par for some customer's checks while continuing to charge exchange on others. This kind of arrangement does not show up in the available statistics, however.

[15] This is the kind of situation that one would think could not long be maintained. The towns in question are Ahoskie, Elizabeth City, Greenville, Lumberton, Plymouth, Roanoke Rapids, Swannanoa, and Washington, North Carolina.

TABLE IV

RATIOS OF EARNING ASSETS* TO TOTAL ASSETS† OF STATE-CHARTERED, PAR-REMITTING AND NONPAR BANKS IN NORTH CAROLINA

Deposits (millions of $)	Par-remitting			Nonpar		
	Number of Banks	Average of Ratios	Range of Ratios	Number of banks	Average of ratios	Range of ratios
less than 1	3	91.44	89.93–93.22	10	73.28	49.78–86.50
1–2	10	83.53	64.45–95.25	32	69.47	40.57–87.45
2–5	24	80.88	67.95–94.34	33	75.42	56.99–84.66
5–10	20	78.47	59.44–89.19	11	75.07	61.23–86.26
10–25	12	77.94	63.51–88.25	3	78.41	68.49–84.46
25–50	1	78.56	—	4	80.95	74.36–89.61
50 and over	2	66.53	63.57–69.49	2	73.13	71.05–77.22
Totals	72	80.13	59.44–95.25	95	73.38	40.57–87.61

* Earning assets include: U. S. Government obligations; obligations of states and political subdivisions; other bonds, notes and debentures; corporate stocks (including Federal Reserve stock); and loans and discounts.

† In addition to earning assets (described above), total assets include: Cash and balances with other banks; bank premises and other real estate; furniture and fixtures; and other assets. Cash and balances with other banks comprise the bulk of these non-earning assets.

Source: Computed from data in *Annual Report* of the Commissioner of Banks of the State of North Carolina for the year ended December 31, 1956.

remitting banks located in the same town. In this kind of situation, the banking offices of the nonpar banks were typically par-remitting also; in fact, 22 of the 31 were par-remitting, and only 9 were not. But the usual situation for a nonpar bank is for it to be the only bank in town.[16]

RATIOS OF EARNING ASSETS TO TOTAL ASSETS OF PAR AND NONPAR BANKS

As Table IV indicates, over 90 per cent of North Carolina nonpar banks (86, all those with deposits of less than $10 million) have lower average ratios of earning assets to total assets than do par-remitting banks in the same size-groups. Only the remaining 10 per cent of the nonpar banks, those with deposits of $10 million or more, do as well as or better than par-remitting banks of similar size in the profitable utilization of bank funds.[17] Ratios of earning assets to total assets of nonpar banks with less than $5 million in deposits are significantly lower than those of par-remitting banks of similar size, and almost 80 per cent (75 of 95) of the state's nonpar banks have deposits of less than $5 million.

Assuming a 3 per cent average annual earnings rate on earning assets, if the nonpar banks of less than $5 million in deposits were as "fully invested" as the par banks of similar size, nonpar banks with less than $1 million in deposits would each earn an average of $2,700 more; those of $1 million to $2 million in deposits would each earn $6,300 more; and those of $2 to $5 million in deposits would each earn $6,100 more. This investment income now being "foregone" amounts to fifty per cent or more of the average exchange income being earned by nonpar banks of these three size-groups.[18]

[16] Or if not the only bank in town, one of two or more nonpar banks in town. Eight nonpar banking offices thus competed with each other.

[17] In the largest size-group ($50 million or more in deposits), the higher average ratio of the two nonpar banks as compared with the two par-remitting banks probably arises largely from the fact that the two par-remitting banks are both members of the Federal Reserve System, and thus subject to substantially higher primary (including legal) reserve requirements than are the nonpar (nonmember) banks.

[18] In earnings and dividends reports to the North Carolina Banking Commission, nonpar banks do not report their exchange income separately, but include it with various other income items in a category labeled "Other service charges, commissions, fees, and collection and exchange charges." Probably at least 75 per cent of income reported under

CHARACTERISTICS OF NONPAR BANKS: SUMMARY AND CONCLUSIONS

Our brief case study of North Carolina nonpar banks indicates that nonpar banks have the following characteristics in common:

1. Nonpar banks are typically smaller than par-remitting banks.
2. Nonpar banks are generally "small town" banks; and they operate in smaller towns than par-remitting banks.
3. Nonpar banks ordinarily operate in "one-bank" towns.
4. Nonpar banks normally have lower ratios of earning assets to total assets than par-remitting banks of the same size—they do not manage the funds at their disposal as efficiently as par-remitting banks; hence they "forego" investment income, on the average, in the amount of fifty per cent or more of their exchange income.

What light do these revealed characteristics of nonpar banks throw on the questions we set out to answer? Why do nonpar bankers persist in relying on an income source—exchange charges—that most of the nation's banks have long since foregone? How are nonpar banks able to continue levying exchange charges when most of the nation's banks no longer levy such charges? What circumstances explain the fact that the remaining nonpar banks of the country are so highly concentrated geographically?

For the typical nonpar banker, exchange income is an easier substitute for income that would otherwise have to be earned "the hard way"—through the more efficient utilization of bank funds.[19] With substantial income available from exchange charges, however, the nonpar banker is not under the same necessity as is his par-remitting colleague of keeping his bank's funds fully and profitably employed. This fact is reflected in the generally lower ratios of earning assets to total assets shown by nonpar banks when compared with par-remitting banks of the same size.

Competition with a par-remitting bank in the same town places great pressure on a nonpar bank to become par-remitting also. But nonpar banks typically operate in "one-bank" towns, and do not compete with par-remitting banks at all. Without competition from par-remitting banks, nonpar banks apparently find little difficulty in continuing to levy exchange charges.

North Carolina and the 11 other Mid-Northwestern and Southeastern states[20] where the bulk of the nation's nonpar banks are located are very similar states in some respects. They are, typically, agriculturally-oriented states whose industrial and urban development has lagged behind that of other places. Relative to the rest of the country, they are states not of large cities but of small towns. Because of this, and also because most prohibit or severely limit branch banking, they are also states of small banks. Like North Carolina, the rest undoubtedly have a high incidence of "one-bank" towns. The small bank in the small town, especially the small bank in the "one-bank" small town, is the bank most likely to be and to continue to be a nonpar bank.

this category represents exchange income, however; and on this basis, nonpar banks of less than $1 million in deposits earned an average of $4,880 in exchange income in 1956; nonpar banks of $1 to $2 million in deposits earned an average of $6,152; and banks of $2 to $5 million in deposits earned an average of $11,347 of exchange income.

[19] Or through some other similarly "unpleasant" method such as the imposition of higher service charges on the bank's depositing customers.

[20] Alabama, Arkansas, Florida, Georgia, Minnesota, Mississippi, Missouri, North Dakota, South Carolina, South Dakota, and Tennessee.

THE UNION IN BRITISH SOCIALIST THOUGHT

JOHN A. COPPS

Stetson University

It is well known that British socialist theory has undergone many changes since the publication in 1920 of *A Consitution for the Socialist Commonwealth of Great Britain*, by Sidney and Beatrice Webb. New looks at the capitalistic economy have led many socialist theorists to the conclusion that certain basic objectives which were formerly considered to be realistic only under socialism can in fact be achieved under capitalism;[1] the earlier tendency to determine the goals of socialism via the application of Ricardian, Henry George rent theory has been virtually discarded; the error in expressing socialism essentially in terms of private versus public ownership of industry has been universally recognized.[2] Developing ideas originated by R. H. Tawney, Hugh Dalton and others who broke away from the Ricardo-Georgian mold, leading British socialist intellectuals have come to place primary emphasis upon such things as manipulation of the tax system to promote equalization of income and ownership, public subsidization of education to equalize economic and social opportunity, and decentralization of industrial power via "municipalization" (as a partial substitute for nationalization of industry) and worker participation in the determination of industrial policy, in their search for the key to "equality."[3]

Of particular interest is the fact that British socialists, profoundly influenced by the experience of the postwar Labour Government and trends in union thinking since then, show evidence of increased concern over the "problem" of unionism which expresses itself essentially in terms of four questions: how to deal with the possibility of wage-inflation under collective bargaining, how free collective bargaining can be made compatible with the general planning of incomes, how to make unionism more responsive to the wishes of individual union members (i.e., more democratic), and how to induce the union movement to cooperate with efforts to establish extensive workers' participation in industrial management.

THE PRESENT DILEMMA

Frank realization of the present dependence of Labour Party strength upon its trade union base together with contentions that socialist policy must be modified or compromised to the point of being acceptable to the union leadership is a prominent feature of virtually all current writings of British socialists. But it is clearly evident that many socialist theorists find this disagreeable, and some show signs of anticipating an ultimate break with the union movement unless it submits to some basic reforms in organization and objectives designed to make it more compatible with the means and goals of their brand of socialism. Such reforms seem very unlikely.

Considering the fact that the British union movement is presently too strong to be badly hurt by the "capitalistic" alternative to the Labour Party's program and that, by the socialists' own admission, the absence of the type of planned economy supported by the socialists would not have to result in wide-scale unemployment and income inequality, British union leaders are not compelled to think of the partial sacrifice

[1] E.g., full employment, reversal of the trend toward greater disparity in personal income distribution, relief from political and economic control by "monopolistic" industry. See, in particular, John Strachey, *Contemporary Capitalism* (New York: Random House, 1956) and R. H. S. Crossman, "Towards a Philosophy of Socialism," *New Fabian Essays* (London: Fabian Society, 1952).

[2] For a superb brief review of the development of British socialist thought see Hugh Gaitskell, *Recent Developments in British Socialist Thinking* (London: Cooperative Union, 1956).

[3] The following are good representations of current thinking on general issues: The essays by Crossman, Albu, Jenkins, Mikardo and Crosland in R. H. S. Crossman, ed., *New Fabian Essays* (London: Fabian Society, 1952); C. A. R. Crosland, *The Future of Socialism* (New York: Macmillan, 1957); Barbara Wootton, *The Social Foundations of Wage Policy* (New York: W. W. Norton, 1955); Hugh Gaitskell, *Recent Developments in British Socialist Thinking* (London: Cooperative Union, 1956); *Twentieth Century Socialism* by the Socialist Union (London: Penguin, 1956); R. H. S. Crossman, *Socialism and the New Despotism* (London: Fabian Society, 1949); and Hugh Gaitskell, *Socialism and Nationalization* (London: Fabian Society, 1956).

of collective bargaining freedom as a price the unions must pay to secure the elimination of the threat of unemployment and overpowering anti-union drives by employers. In short, British unions and their members are not as dependent upon the alliance with socialism as they once were prone to think they were,[4] and it is extremely unlikely that the British union movement will shift from its present strongly conservative thinking regarding the nature of union organization and the role of free collective bargaining.

It is our belief that, with respect to the union question, one can classify socialist intellectuals in Britain on the basis of their opinions with respect to the issues previously mentioned—wage-inflation, collective bargaining and the planning of incomes, union organization, and "industrial democracy." Thus, Barbara Wootton may appropriately be placed to the left of center because of the views that she has expressed in her recent book, *The Social Foundations of Wage Policy*. Miss Wootton expresses deep regret over the "fall of the equalitarian social philosophies" within the ranks of socialists, and attributes it in large part to what she believes to be a transformation of British unionism "from its role as the defence of the manual workers against the depredations of their economic betters into a highly organized machine, professionally operated for the protection of sectional interests at all levels."[5] Miss Wootton is keenly of the opinion that unrestricted collective bargaining tends to be inflationary, and feels that there is little point in developing social services and other programs for the promotion of social equality without having solved the wage problem. Suggesting also that the control of wage rates is important in the general planning of industrial production, i.e., the encouragement of industries vital to the socialist plans, she defends the idea that wage-planning must be a feature of socialist policy even if it means risking a collision with the British union movement.[6]

R. H. S. Crossman directly attacks the centralization of power in the union movement and the right of the unions to undermine efforts to impose planning of wages if such should be judged important in the fulfilling of socialist objectives, thus he cannot be called a "rightist" on the union problem.[7] Ian Mikardo bluntly accuses British unionism of being obstructionist with respect to workers' participation in management, charges the union movement with failing to be truly democratic and in other ways affirms his position as a "leftist" among British socialists.[8] On the other hand, Hugh Gaitskell, while mildly critical of the unions' tendency to put sectional interests above the general interests, proposes a plan for nationalization, industrial democracy, and the control of investment spending which in no serious way challenges the union movement in its present course.[9]

Assuming the unlikelihood of a change in the orientation and practices of British unionism, two basic alternatives are open to the formulators of socialist theory: Meet the union challenge head on by laying the groundwork for the eventual downgrading of the role of the union in the socialist planned economy, or define the means and goals of socialism in such a way as to erase, directly or by implication, the socialist challenge to the union movement. To the writer's mind, the two alternatives are best represented by the ideas expressed by G. D. H. Cole, on the one hand, and by C. A. R. Crosland in *The Future of Socialism* and the authors of *Twentieth Century Socialism*, on the other. Cole rates special attention because of his unique position as one of the few principal socialist theorists who have made the detailed, independent study of British unionism a major part of their work,[10] the others because of the positive way in which they attempt to deal with the union-planning problem, and because they appear to be in the vanguard of a new,

[4] Despite the Trades Union Congress' repeated support of the principle of nationalization, consumer subsidies, and general economic planning, one wonders in reading the annual T. U. C. reports whether the use of government power to control profits and dividends is not the major specific benefit which leaders of British unions feel can be gained only from a party committed to comprehensive economic planning.

[5] Pp. 175–6.

[6] *Ibid.*, pp. 178, 188.

[7] *Op. cit.*, pp. 8–10.

[8] *Op. cit.*, pp. 152–8.

[9] *Op. cit.*, pp. 5, 12, 30–26.

[10] See *The World of Labour* (London: G. Bell and Sons, 1915), *British Trade Unionism Today* (London: Victor Gollancz, 1939) and *An Introduction to Trade Unionism* (London: Allen and Urwin, 1953).

conservative movement among socialist intellectuals in Great Britain.

THE "RIGHTIST" COURSE

It would be unfair and inaccurate to draw the conclusion that C. A. R. Crosland in his book outlining a new program for British socialism was basically motivated by a desire to free the British union movement from apprehension regarding its commitment to socialism. The moderate program that he proposes is the outgrowth of his belief that the basic economic problems have, for the most part, either been solved or are in the process of being solved, and that the future of socialism lies in the solution of social problems which do not or need not directly involve the union-socialism issue.[11] Nevertheless, Crosland does address himself to this issue, and the manner in which it is resolved in such a way as to call for little modification in the policies and practices of British unionism is prominently featured.

Expressing confidence that individual British unions have no intention of vesting the General Council of the Trades Union Congress with any of their present power over wage policy, Crosland quickly disposes of union-sponsored national wage control as being impractical. He also rejects government-sponsored and enforced wage policy on the multiple-grounds that no workable method of determining the proper size of the wage-bill can be developed; the practical problems of allocating the wage "fund" between and within the various industries are insoluble; such a policy would increase rather than diminish industrial unrest; and that the case for a national "wages policy" as a means for fighting inflation has not been proven.[12] Defending a free, "supply and demand" labor market, he opposes all forms of centrally controlled allocation of labor, absolves free collective bargaining of responsibility for price-inflation, and even maintains that it is not right to expect unions to adopt a policy of wage-restraint in the face of inflationary threats.[13]

Finally, Crosland turns completely away from the idea of "industrial democracy" involving worker organizations that would be independent of the labor unions. Reflecting an awareness of the challenge to the union movement that they would imply, and without making it conditional upon the unions becoming more "democratic" as other socialist blueprinters have done, he maintains that the union movement is the appropriate wage-earner representative for promoting the democratization of industry. Crosland concludes that the forms which the democratization of industry take will and should develop naturally from present worker-management joint-consultation procedures.[14]

The "rightist" philosophy reflected in *Twentieth Century Socialism* is expressed in terms of the authors' emphasis upon placing strong reliance upon private countervailing economic organization, with independent unionism playing a prominent role, as a basic means for neutralizing the market power of private industry.[15] This represents a rather sharp departure from traditional features of socialist thinking which have stressed above all else the role of the "community" or the government in the correction of market imbalances that result in social and economic inequality. Calling the socialist economy "mixed in all its aspects," the authors propose a network of government regulation and enterprise, consisting of fiscal reforms, nationalization of key enterprises and various means for encouraging desirable private economic activity, which would serve more as a guide and a cor-

[11] In pursuit of "social equality," Crosland stresses above all a need for educational reform to widen the opportunities for schooling, changes in the structure of gift, death, corporate and personal income, and capital gains taxation in the interests of equalizing ownership, and greater decentralization of industrial decision-making power through encouraging the independent development of joint employee-management consultation procedures.

[12] *Op. cit.*, pp. 458–60.

[13] Pp. 442–4, 450–1. On the latter point, Crosland states: "It is not the responsibility of the Unions to determine whether or not we have a price-inflation. This is the responsibility of the Government, which should create, by its fiscal and monetary policy, those economic conditions in which the Unions and employers will lead to the price-level it desires" (pp. 450–1).

[14] *Ibid.*, pp. 342, 348–50, 519. "The changes required to create a more social-democratic climate in public and private industry fall rather within the field of Trade Union action than of legislation, though government pressure can be a useful ally" (p. 519).

[15] Pp. 132–3.

rective in the economy than as an instrument for direct general control.

In the economy blueprinted in *Twentieth Century Socialism* the union would play a role not qualitatively different from the role that it would play in a "welfare-minded" capitalistic economy. Stating that "what is good for each industry can hardly be bad for the economy as a whole," the authors insist that necessary planning of wages should be at the initiative of unions and employers, with the government serving essentially as the conference "chairman," calling the parties together from time to time.[16] Rejecting the idea of manipulating the structure of wage-rates as a means of influencing the allocation of labor, and insisting that individual workers be assured complete freedom of job-choice, they conclude that general wage planning should be concerned with the aggregate level of employee income, and should emerge from analyses of the relationship between the various distributive shares, wages, profits, etc.[17] No mention is made of the need for or desirability of any kind of direct pressure to induce individual unions and employers to conform to the wage plans, nor do the authors specifically relate the planning of wages to the inflation problem, which they attribute primarily to demand rather than cost factors.[18]

Twentieth Century Socialism proposes essentially the same kind of "industrial democracy" that is proposed by Crosland. Just as they have nothing to fear regarding legislative restrictions on bargaining over wage-rates, the unions would have no reason to be suspicious of the "industrial democracy" provisions in the *Twentieth Century Socialism* blueprint, for the reason that they would have complete control of it. Contending that "voluntary action is always to be preferred to state action," the authors would rely upon the further development of "joint-consultation" machinery, with the workers looking to their unions for guidance and representation.[19] The authors are at times critical of the union movement in Great Britain, but criticism is always in the nature of a complaint that the unions are showing lack of vigor in promoting the growth of worker-management consultative machinery, and for failing to give adequate attention to the problems of the individual workshop.[20] Reform at these points would not involve any change in the basic organization and policies of British unionism.

[16] *Ibid.*, pp. 73–4.
[17] *Ibid.*, pp. 75–134.
[18] *Ibid.*, p. 67.
[19] *Ibid.*, pp. 112–13, 132.

G. D. H. COLE'S "LEFTIST" COURSE

In his most famous book, *World of Labour*, Cole reached an early peak of reform-mindedness. The period was characterized by revolutionary fervor, and he was not to be outdone in his determination to spring men free from the supposed false hopes of capitalism. British labor, seldom certain as to whether industrial or political action offered the best relief from the "wage system," became disillusioned with the effectiveness of social reforms introduced by the Liberal Government and swung strongly toward industrial action following the first decade of the twentieth century. With membership growing rapidly, the union movement engaged in a series of bitter strikes aimed primarily against declining real wages. Guild socialism, with Cole its principal exponent, was a product of this disillusionment with governmental methods for reforming the economic system. Based upon a unique interpretation of trends in the British union movement, it attempted to blaze a new trail in the search for a substitute for capitalism.

Cole listed the contending alternatives as "syndicalism," "collectivism," and the hybrid "guild socialism." Handing the reins of industrial control (but not of government, which was the property of all people) to the working citizens of industry constituted the only true revolution, the one profound reform. Nationalization of industry, the pet of the Fabian "collectivist" approach, promised to be "merely a transference of authority from the capitalist to the bureaucrat," and thus posed the threat of "state" tyranny.[21] However, if handled properly—that is, constantly checked by the unions—nationalization could serve as the halfway house to industrial democracy. Cole contended that the final stage would emerge when union officials "drive the State officials gradually out of the lower posts till the process culminates in the extinction of the State official, in the realm of actual industry."[22]

[20] *Ibid.*, 106–17.
[21] *World of Labour*, p. 347.
[22] *Ibid.*, p. 386.

Thus, as Cole saw it then, the union movement was to serve as the dynamic element in social reform. Carefully schooling its membership in the techniques and principles of industrial management, the unions would continuously expand the scope of collective bargining until the time arrived when it would be equipped by interest and understanding to serve as the agency which transforms "capitalistic" industry into "socialistic" industry. Wage-earners and their unions would, through experience, naturally come to understand that the instruments of state power could and would be used to hurt them just as easily as they could be used to help them.[53] Voluntarism, then, as Cole saw it, was the order of the day, the only dependable course: The goal of true socialism was not to be the simple gift of government, but the natural consequence of the emerging vision and solidarity of industrial citizens acting through their chosen instrument, the labor union. The process would end when something of a partnership would emerge in economic life. The "state," representing consumer interests, would have ultimate power to determine what is to be produced, how much and when; the producers, through their elected managers, would have control over the policies that mattered to them: how to produce the product and under what labor conditions.[54]

By the early 1930's Cole's enthusiasm for old-line guild socialism had passed its peak and receded to a point where his fundamental differences with "collectivist socialism" could be reconciled. Idealism tempered by realistic appraisal of the difficulties of implementing his original formula carries down through the many books, pamphlets and articles that he has since written on the subject. While he still insists that "industrial democracy" must be an essential part of the socialist economy, his attention has come to be focused on the immediate situation of the "workshop" and the shop problems that directly affect the worker. Calling it "industrial partnership" and expressing hope and confidence that it will continuously expand its scope until it acquires some of the features of his earlier scheme, Cole currently proposes (1) that all workers be declared by law "partners in industry" (private as well as public) which would involve security of employment and job-status, and (2) that all workers be permitted and encouraged to compose themselves into democratically governed units, independent of the unions, that would elect their immediate supervisors, assign worktasks and perhaps ultimately determine pay-scales within the limits set by collective bargaining contracts.[55]

Certainly the major factor in Cole's transformation from a "guild socialist" to a "collectivist-socialist" with "guild socialist" leanings has been the change in his view of the nature and possible role of the union movement in the socialist economy. Attributing his decision mainly to the weakness that unions displayed in the face of depression, and their apparent inability to change their organization to meet the circumstances of changing industry, Cole had concluded by 1935 that socialism must come into existence through action that stresses public ownership rather than through direct union action on the industrial front.[56] *British Trade Unionism Today* confirmed the change in Cole's view of the essential facts of British unionism. In this book he described the movement as an inherently conservative institution, convinced that determined, continuous defense of the immediate interests of its members was the price of survival, and contended that British socialism should learn to live with the fact that the British worker has a clearer understanding of the goals of unionism than of the principles and objectives of socialism.[57] Despite his contentions that British socialism must take unions essentially as they are and learn to live with them, Cole's resignation to the apparently permanent existence of a union movement which, as he sees it, is not only more interested in collective bargaining than in anything else but also fails to meet the test of a truly democratic institution,[58] has had its consequence in a *de facto* effort to downgrade the future role of union-

[53] *Ibid.*, p. 25.
[54] *Ibid.*, p. 358.

[55] G. D. H. Cole, *The Case for Industrial Partnership* (London: Macmillan, 1957), pp. 24–7, 39–41, 82.

[56] G. D. H. Cole, *Economic Planning* (New York: Alfred A. Knopf, 1935), pp. 345–7.

[57] Pp. 13–15, 23–4.

[58] Cole has repeatedly criticized British unionism for its centralized power structure and its failure to provide the individual union member with opportunity to make his views known and his influence felt: "The Labour Party and Trade Unions," *The Political Quarterly*, January-March 1953, p. 25; "What I Said at Margate," *Fabian Journal*, December 1953, p. 5.

ism. Cole's attachment to general socialist planning, which he has supported as strongly as "industrial democracy" since his guild socialism days, his almost worshipful attitude toward "equality" and his abhorrence of the principle of profit-making enterprise[29] prevents him from seriously considering the dilution of socialism as an alternative. Cole downgrades the role of the union, on the one hand, by attempting to bring about a transfer of responsibilities at the "shop" or factory level from the union to a new system of worker organization, the "industrial partnership" organization, which he admits would likely meet with strong union resistance,[30] and on the other hand by insisting that the power to determine all income shares including wages must ultimately rest in the hands of central planning authorities. This also would obviously be considered by British unions to be against their interests.

Though he has defended the Trades Union Congress' opposition to a national "wages policy" under the post-war circumstances in which it was considered, and has questioned the view that high wages have been a basic cause of inflation in Britain, on repeated occasions Cole has stated that labor income must eventually be centrally planned.[31] In the completely socialized economy "it will not be possible for any important category of incomes to be varied by bargaining without the assent of some recognized income-planning body closely attached to the general planning machinery of the society "...it is natural and inevitable that the shares of the various 'factors' in the divisible product shall be in the main centrally determined as elements in the national economic plan."[32]

[29] "I am not ... seeking in any way to justify an indefinite continuance of capitalist enterprise in any branch of production. On the contrary, I look on the entire system of profit-making industrialism as radically wrong, and as inconsistent with the essential principles of industrial democracy." *The Case for Industrial Partnership*, p. 82.

[30] *An Introduction to Trade Unionism*, p. 283.

[31] *Labour, the TUC Magazine*, April 1954, pp. 91–2; A condensation of "Wages Policy" by Cole in *Financial Times*, Feb. 1954; *The Postwar Condition of Britain* (London: Routledge and Kegan Paul, 1956), p. 448 for the comment on inflation.

[32] G. D. H. Cole, *Socialist Economics* (London: Victor Gollancz, 1950), p. 66; *Labour, the TUC Magazine*, April 1954, pp. 91–2.

Thus, British unionism, which exerts its economic force most importantly in the broad middle zone between the individual production unit and the inter-industry or national level, i.e., at the firm and industry level, would, according to Cole's plan, see its powers threatened at one extreme in terms of the rise of a new system of employee organization which would serve as a competing focus of worker loyalty and interest, and at the other extreme in terms of the imposition of national income planning which would severely limit collective bargaining. Cole appears to be carving out a role for unions by supporting the idea of having the unions convert "joint-consultation," as it functions at present, into collective bargaining.[33] Assuming that "industrial partnership" would in fact gradually grow beyond the bounds of the "workplace" to include decision-making on labor issues at higher levels, this would in practice amount to little more than temporarily placating the unions. Ultimately, with the imposition of centralized planning and the expansion of the "industrial partnership" organization, this avenue for union power expression would be severely limited. If the new worker organizations were very effective in serving the workers' interests, particularly at the "workshop" level which Cole believes is so critical, and in consequence wage-earners came to feel a special loyalty to these organizations, the result would probably be a general weakening of the hold that the present union leadership has upon industrial policy and, conceivably, a weakening of their ability to stop the drive toward the "fully socialized economy."

"CAPITALISTIC" UNIONISM IN A SOCIALIST ECONOMY

"Capitalistic" unionism may be described as unionism that is avowedly in competition with other institutions, including other unions, for possession of material wealth and economic power. It may, and normally would accept a general responsibility for the welfare of other groups, but, typically for internal political reasons, discriminates in favor of its own clientele. As such, it contrasts with what may be called "socialist unionism," which, considering itself a means to an end, would freely cooperate with other groups interested in attacking "inequality" in wealth and power, and interested in bringing about "equal distribution" of wealth and power.

[33] *The Case for Industrial Partnership*, pp. 44–5.

"Capitalistic" unionism may support nationalization of industry without compromising itself. It makes little difference to it whether it functions in private or socialized industry, provided unrestricted collective bargaining is guaranteed, since the possibility of bringing its economic force to bear in competition with other groups exists in either case. In fact, "capitalistic" unionism may support nationalization of industry, if this will tip the power-scales in its favor by way of making public management ultimately beholden to it—ultimately dependent upon the political support of the unions for its continued existence. Similarily, support of price-controls, consumer subsidies and central control over the allocation of financial and material resources is quite compatible with the principle of "capitalistic" unionism. Such support, regardless of the fact that it may be accompanied by strong denunciations of the free-market principle, cannot alone in any logical sense qualify a union movement as "socialistic."

Evidence of an awareness of the essentially "capitalistic" outlook of British unionism is observable in some of the early writings of British socialists. As far as the writer knows, the Webbs at no time specifically referred to British unionism as "capitalistic," but they took great pains to make clear their belief that the union movement had no natural disposition to support the principles of socialism. Their injunction to social reformers was to appeal to workers as "citizens" rather than as members of unions in their efforts to gain converts.[34] George Bernard Shaw, the socialist "gadfly," did specifically refer to the British union movement as inherently "capitalistic."[35] Out of such interpretations emerged what may be called the "double-identity" view of the worker which has been so prominently featured in socialist writings. The "double-identity" view holds that the worker thinks and evaluates in terms of two relatively independent standards: "producer" standards and "citizen" standards. It is in his role as a "citizen" that he is assumed to support socialist policy. In his role as a "producer" he is assumed to support his union.

[34] Sidney and Beatrice Webb, *Industrial Democracy* (London: Longsmans, Green, 1920), pp. 832–3.

[35] George Be.nard Shaw, *The Intelligent Woman's Guide to Socialism and Capitalism* (New York: Brentano, 1928), p. 186.

THE MEANING OF GUILD SOCIALISM

The fundamental problem with which socialist theorists and politicians have long been greatly concerned is that the interests of man the "citizen" or "consumer" are often in conflict with his immediate interests as a producer, and that he has shown a disturbing tendency to rank the latter above the former. Cole seems to have recognized this at an early date and "guild socialism" was his answer. In fighting to raise man the "producer" to a position of equality with man the "consumer" in socialist theory, and actually make it work for socialism, Cole made a uniquely determined effort to resolve this fundamental problem.

But this necessitated transforming the wage-earners' "producer-minded" institution, the labor union, into a form which would be compatible with the "citizen-oriented" side of socialist theory, to preserve it as the defender of the individual's producer interests, but give it a vested interest in the individual's consumer interests, and thus an inherently vested interest in socialism. Guild socialism offered the unions the status of true equal partner with the socialist central planning authority, with a reasonably clear division of responsibility between the two. In exchange for submitting to general economic planning, which would have involved the power of the central authorities to influence the division of income, the union was to become the policy-making agency of nationalized industry with implied power to directly challenge on equal grounds (i.e., as a basic agency of planning) the decisions of the central authorities. In such manner, the trade union movement would have become thoroughly integrated into general socialist planning.

"Guild unionism" seriously went on trial before the Trades Union Congress in the early thirties. The T. U. C. came reasonably near adopting "workers' control" via unionism at its 1933 Congress.[36] The following year the Congress did adopt a resolution calling for statutory recognition of the wage-earners' right to a share in the control of industry,[37] but interest waned after

[36] Trades Union Congress, *Proceedings*, 1933, p. 371. A resolution stating that "worker control" with the union as its "nucleus" must ultimately replace "proprietor control," and, with this in mind, to refer the General Council's Report back for further study was defeated 1,428,000 to 1,045,000.

[37] Trades Union Congress, *Proceedings*, 1934, pp. 371-3.

this, and by 1944 "workers' control" had ceased to be a really live issue with the T. U. C. In that year the Congress shifted from "workers' control" to emphasis upon "joint consultation," with the unions in effect controlling the worker side of the joint-consultation machinery.[58] With the death of "guild socialist" sentiment, interest within the union movement itself in transforming British unionism into uniquely "socialistic" forms passed away, and its traditionally "capitalistic" outlook has been reaffirmed. It is this reaffirmation which has presented the architects of British socialist theory with their most difficult problem. It is in connection with the role of the union movement and the relationship between unionism and economic planning that the basic issues between the several "wings" of British socialism is drawn. The "right-wing" may have differences with the "left-wing" regarding the extent to which British industry should be nationalized, but, considering the fact that all appear to agree that as a practical matter much of British industry must remain private, such differences are of marginal importance; the real differences relate to the union movement.

CONCLUSION

Crosland and other representatives of his group, in sharp contrast with the "left-wingers," seem clearly to have accepted British unionism as a potent force the nature and objectives of which are little if at all subject to being influenced by the exhortations and remonstrations of socialist intellectuals interested in the fullest expression of "equality" and "cooperation." Unlike Cole who insists that wage-earners have a natural interest in industrial democracy which expresses itself in a desire to support "industrial partnership" organizations even against the acknowledged opposition of the union movement, Wootton who believes that there is essential common sense in the thinking of the British people which would support the government in conflicts with the unions over income planning,[59] and Mikardo who speaks of the "rank and file worker" as being "intolerant" of the alleged uncooperative attitude of union leadership toward the socialization of industrial relations,[60] Crosland and the authors of *Twentieth Century Socialism* do not differentiate between individuals and their present organizations in terms of their readiness to adapt themselves to the principles of socialism, nor do they base their blueprints on the assumption that union members will sooner or later more closely approximate some ideal of cooperative, "democratic" behavior. As is evident in their emphasis upon such things as educational, monetary, and fiscal reforms, and their opposition to government planning of incomes and the controlled allocation of labor resources, the "right-wingers" appear to look upon the union movement as an organic, independent phenomenon, and have outlined socialist goals which are flexible, leaving a good bit of leeway for British unionism to move in its uncertain, unpredictable way with a minimum of friction.

[58] Trades Union Congress, *Proceedings*, 1944, pp. 410–12. Certain unions, notably the Union of Post Office Workers, the National Union of Railwaymen and the National Union of Bank Employees, have since made repeated efforts to convert the T. U. C. to modified "workers' control" through adoption of a policy of direct union representation on boards of nationalized industries, but the efforts have been easily defeated by the powerful opposition of the General Council.

[59] *Op. cit.*, pp. 177–8, 181.

[60] *Op cit.*, p. 154.

UNITED STATES ANTITRUST POLICIES: HOW EFFECTIVE HAVE THEY BEEN?*

JESSE W. MARKHAM

Princeton University

The effectiveness of any public policy must be judged in terms of how successfully it obtains its stated objectives. Such judgments may be based on the persuasiveness of the logical connection between certain actions (the policy) and results, on the observed results, or on both. Public policies are generally expressed in law. Sometimes the law so clearly expresses the public objective that, in a lawabiding community, policy may be judged effective on its face; e.g., the purpose of the present minimum wage law is to insure all workers in interstate commerce that they will earn at least $1.00 per hour; a factual inquiry into how many workers in interstate commerce earn less than the minimum wage would test the law's effectiveness only in the sense that it would reveal the extent to which it was violated. But it can probably be fairly stated that most of our broad economic policies must be judged primarily on the basis of the logical connection between the actions they envisage and the objectives they define. The effectiveness of the Labor Management Act to maintain high levels of employment rests more on the logic of national income analysis than on observable instances where the weapons of fiscal and monetary policy have in fact cured major recessions. Economists are much more in general agreement that such measures *should* reduce unemployment than that they *have* effectively reduced specific amounts of unemployment.

The problem of determining the effectivness of such broad economic policies by observation stems from the impossibility of isolating and establishing cause and effect. But if the *ceteris paribus* condition poses difficulties for assessing by observation employment policies, it presents obstacles of even larger size to such an assessment of antitrust policy, especially one that proceeds on a case by case, industry by industry, basis. Industries are in large part historical, and in the broad sweep of history the structure and business policies of any one of them may have been shaped much less by cases brought directly against its members than by innovations, changes in consumer demand, the outcome of antitrust cases against other industries, and by living within the limits of antitrust law as understood by private legal counsel.

Dr. Whitney's *Antitrust Policies: American Experience in Twenty Industries* is an attempt to assess antitrust policy by observation. His coverage is immense and his sources varied and voluminous. Total cases examined number nearly 400, making up the main body of judicial interpretation of antitrust statutes. The twenty industries, ranging in economic importance from automobiles, steel, chemicals, tobacco, petroleum, paper and meatpacking to anthracite coal, sleeping cars, cast iron pipe and corn products, account for about one-third of the gross national product. Eight were selected because they were economically important, twelve because they had been involved in famous antitrust cases. Except for coal, textiles and insurance, the industries represent the oligopolistic core of American manufacturing: the median concentration ratio for thirteen of the twenty in 1947 was 44.7 while that for industry generally was 36.4 (vol. II, p. 403).[1] His assessment of antitrust activity in these industries is drawn from a wide variety of information, including published industry studies, unpublished theses, public documents, government and business memoranda, court and commission decisions, completed questionnaires and interviews.

Whitney's findings are scarcely calculated to inspire (although they may prod) proponents of vigorous antitrust on to greater distinction. Antitrust agencies have won their most discernible victories against collusive agreements on prices and output. Whitney generally endorses these victories, but his reason for doing so is not always

* This essay is a review article on the book, *Antitrust Policy: American Experience in Twenty Industries*, by Simon N. Whitney. New York: The Twentieth Century Fund, 1958. Vol. I, pp. xxiii, 560. Vol. II, pp. x, 541.

[1] All page citations to Whitney's study appear in the text.

that they have increased competition. The *Addyston Pipe* decision, the first important price fixing and market sharing case under the Sherman Act, led the six defendants to merge into the United States Cast Iron Pipe and Foundry Company. The combination became strong and efficient as it closed down its high cost plants and accepted a smaller share of the market (vol. II, p. 13). This was the principal beneficial result of the decision. The "glucose" and *Cement Institute* decisions helped to break up formal basing-point pricing systems, but they did not appreciably affect the pricing of cement and refined corn products. The sums of money at stake in delivered versus f.o.b. mill prices on corn products were negligible, and less than one per cent of the buyers have exercised their right, decreed by the court, to buy f.o.b. mill and arrange for their own transportation (vol. II, p. 276). Self interest is still sufficient to discipline cement manufacturers, however the *Cement* decision "... at least removed one artificial control" (vol. II, p. 321). The antitrust laws have had no significant effect on the tobacco products industry since the dissolution of the tobacco trust in 1911, the famous 1941 case having simply scared the "big three" into keeping their prices down, thus increasing their market share (vol. II, p. 56). But evidence of market control by the "big three" had given the government its victory. Cases against collusive practices in meatpacking (vol. I, p. 94), paper (vol. I, p. 384), and tin cans (vol. II, p. 226) have been more effective because they have made pricing more competitive, but Whitney credits antitrust with a small proportion of the price competition found in the twenty industries generally.

The courts have been reluctant to decree dissolution, divorcement, and divestiture as a remedy in antitrust proceedings—too reluctant for many, perhaps too reluctant for most. As Judge Wyzanski has put it: "In the antitrust field the courts have been accorded ... an authority they have in no other branch of enacted law.... They would not have been given, or allowed to keep, such authority ... if courts were in the habit of proceeding with the surgical ruthlessness that might commend itself to those seeking absolute assurance that there will be workable competition...."[2] The underlying considerations captured in this summation of the courts' attitude surely argue for judicial caution: often when the government seeks dissolution it fails to propose a rational and technically feasible plan (*United Shoe Machinery*); sometimes its proposed plan, to the judicial mind, is unpersuasive (*National Lead*); and occasionally the government seeks remedies which are confusing and conflicting; e.g., the Federal Trade Commission's case against Crown Zellerbach's horizontal acquisition of St. Helens is that it reduces the number of independent paper producers in the West Coast market; its case against International Paper's vertical acquisition of Long Bell Lumber Company is that the *addition* of International to the West Coast market will lessen competition. As Whitney pithily puts it: "One has great difficulty in seeing this" (vol. II, p. 466). Superimposed upon the human tendency of antitrust agency personnel, like the rest of us, to err, is the important consideration that those who started the company on its path toward market dominance usually have left the scene by the time the case is initiated. Corporate identity and continuity of life notwithstanding, judges understandably are reluctant to impose on the present management, stockholders, and labor force the price of paying for acts of questionable legality committed by past generations of management. In short, there are genuine practical obstacles to dissolution, in spite of the fact that it is the normal remedy for illegal merger and often the only effective remedy for monopolistic market power.

Whitney recognizes these obstacles to dissolution but they are not especially relevant to his study. Between 1900 and 1956 the government initiated forty dissolution proceedings against members of the twenty industries; it won twenty-three, compiling the respectable batting average before the courts of nearly .600, these were cases, then, where the persuasiveness of government argument overcame the courts' reluctance. Yet, Whitney finds even these dissolutions as having relatively unimportant effects on the structure of the industries involved. The westward spread of oil exploration was creating new companies at the time the Standard Oil trust was dissolved: the introduction of the burley blend cigarette in 1913 might well have made cigarette manufacturing competitive without the dissolution of American Tobacco; du Pont would "almost certainly" have diversified its activities

[2] *United States* v. *United States Shoe Machinery Corp.*, 110 F. Supp. 295, 348 (D. Mass., 1953).

after World War I without the 1912 du Pont "powder trust" dissolution; the 1915 dissolution decree against motion picture producers was against a trust already moribund; the 1918 *Corn Products Refining* and *International Harvester* decrees were not significant; the 1920 divorcement of railroading from coal mining was sound in principle but had no very practical consequences; and the postwar rise of competition in nitrogen and aluminum is more directly traceable to the Surplus Property Act than the Sherman Act (vol. II, pp. 388–90).

What, then, has dissolution under the antitrust laws achieved? In the long run, as I interpret Whitney, very little. It would surely appear, and it has to many, that the dissolution of three such near-monopolies as oil, tobacco, and explosives would have discernibly affected their structure and competitive behavior. But a comparison of these industries with tin cans, steel, farm machinery, and aluminum—four near-monopolies the government failed to dissolve—shows that the two groups have developed along similar lines. In short, dissolution has served a "useful function in some instances by shortening the period needed for competition to assert itself against original near-monopoly" (vol. II, p. 390), but in stepping up the time schedule it has not greatly altered the final result.

Whitney does not conclude from all this that the antitrust laws have had nothing to do with the primacy of the American economy. The urge to compete is woven into our social fabric, and has been the driving force behind our vast capital formation, factor mobility, and high rate of innovation. In this context the antitrust laws give permanent legal expression to a basic national trait. In turn, the laws themselves may be credited with having barred outright cartelization along European lines and have helped to maintain equality of opportunity and freedom of entry in industry (vol. II, pp. 436–37). But, as I read Whitney, he attributes the fruits of our competitive economy much more to the businessman's urge to compete than to its legal shadow, the antitrust laws.

Whitney's policy conclusions are consistent with his diagnosis. If, as he asserts, antitrust policy has left no large enduring imprint on those industries in which the greatest legal victories have been won, it may be concluded either that (1) competitive forces are so strong that they all but obliterate efforts to buttress them by law, or (2) the fortresses of monopoly are impregnable to existing means of attack. It would follow from the first that the antitrust laws are at least strong enough and probably unnecessary, from the second that they need to be greatly strengthened. These are entirely different conclusions, and the choice between them is very likely to depend on how competitive one thinks the economy is, and ought to be. Whitney disagrees with those who urge that antitrust policy be strengthened (vol. II, p. 292), primarily because he finds no evidence that those industries against which the stronger policy would be pressed operate less efficiently for the public welfare than those comprising many small firms. On the other hand he does not urge that antitrust policy be enforced with less vigor. Presumably, therefore, he is satisfied with policy as it now stands, mainly because he puts greater faith in the businessman's drive to compete than in laws which prohibit monopoly.

To the reviewer's chagrin—but to Whitney's credit—the two-volume study comes complete with its own independent reviews. The final chapter, written by the Twentieth Century Fund Committee, reviews the issues to which the study is addressed and contains the dissenting and supplementary statements of committee members who wished not to be identified with the majority. An appendix contains chapter reviews by forty-one representatives of industry, government and the academic profession. Whitney, through footnote comments, has in turn indicated his agreement or disagreement with the forty-one reviewers. By the time any latter-day reviewer has waded through these sixty-two pages of critical and countercritical comment and performed the necessary mental bookkeeping, his power to dispense original and constructive criticism has become severely taxed. I shall try in what follows to distinguish between the original and the imitative.

I believe that Whitney's method has led him seriously to understate the role antitrust policy has played, and is playing, in governing the American economy; and while his analysis leads him appropriately to attribute much of our economic well-being to the business community's propensity to compete, innovate, and reap the economies of mass production, he altogether neglects its propensity to monopolize. Since he never balances these two forces against each other he tends throughout to explain, often with-

out convincing evidence, the present structure of industry in terms of "natural" market forces.

In a society dedicated to liberty under law it is expected that laws will generally be obeyed. Violations occur, innocently because the law may be vague and willfully because it is excessively restrictive but imposes no severe penalty for violation. Businessmen, according to Whitney, support the antitrust laws. Most of them consider that they do more good than harm. They do not then find the laws excessively restrictive. They do often find them vague. But businessmen who are in doubt about the legal status of a contemplated action are likely to seek the advice of legal counsel. The relevant advice is concerned more with the law governing particular trade practices than with the company's antitrust experience. Hence, it cannot be concluded that antitrust policy has had little impact simply by showing that industries in which the government has won its greatest victories and those in which it has suffered its big defeats have somehow developed along similar lines. The similar lines are surely due in part to the fact that they must obey the same law.

This body of law appears to be developing in both strength and clarity. In 1920 there was much uncertainty, even in the Supreme Court (it was a 4–3 decision), as to whether United States Steel, a combination involving 60 per cent of basic steel capacity, violated the law. Between 1953 and 1958 the government, at least on the first go-round, won cases against Bethlehem, Pillsbury, Crown Zellerbach, and *Farm Journal*, among others. These were minor combinations compared with United States Steel. The probability is high that a combination involving as much as 20 to 25 per cent of a relevant market will, under current antitrust policy, be judged illegal. Until 1953 the outcome of cases involving up to three times this percentage would have been highly uncertain.[3] As Dean Edward Mason recently put it: "Market power 'without more' is still no violation. But the 'more' is now less and the concept of power is more embracing than it was in the 1920's."[4] Meanwhile, the *Socony-Vacuum* decision of 1940 again made price-fixing agreements illegal per se, the *American Tobacco* and basing-point decisions made it clear that the excesses of conscious parallelism could be reached by the antitrust laws, the *Aluminum Company* decision overturned the doctrine the "mere size is no offense," and under the Robinson-Patman Act virtually any policy of different prices to different customers became legally suspect. These developments make a strong logical case that antitrust policy has significantly affected the conduct of business—a stronger case, I believe, than Whitney's observations to the contrary.

Professor Melvin de Chazeau, in his penetrating and critical review of Whitney's chapter on petroleum, observes: "Is it significant that the author's opinions seem good or bad when the supporting argument is quite unconvincing to anyone not sharing his intuitions at the outset and equally unsatisfying to those who share them but seek more than the assurance that similar views have been expressed in print?" Analysis divorced from opinion can help resolve policy issues, although it may tend toward the dull side, but opinion without analysis leaves the important task still to be done. Much of Whitney's characterization of industry is brilliantly conceived opinion—but it is still opinion. The structure of the automobile, aluminum, and tobacco products industries is explained largely in terms of economies of scale; meatpacking, petroleum, chemicals, and cast iron pipe (in recent years) are competitive; corn products, pullman cars, and motion pictures confront much inter-industry competition; coal and textiles are highly competitive; farm machinery, while not especially competitive, has been blessed with a dominant firm whose performance is commendable; and the tin can industry has been dynamic and competitive.

It may well be, as de Chazeau points out, that exhaustive analysis would support such conclusions. But with the exhaustive analysis missing they remain as provocative but, as yet, unsatisfactorily tested theses. For example, Whitney infers large economies of scale in automobile production from the high failure rate of small automobile firms (vol. I, pp. 467, 519); i.e., only the large have survived. The "survival" test is not only inconclusive but may be highly inappropriate for an oligopolistic market. It is inconclusive because small companies (relative to General Motors and Ford) have (as of 1959) survived for

[3] Actually, none involving such large market shares have recently occurred. Combinations after the 1887–1904 wave typically involved less than 40 per cent of the market.

[4] Edward S. Mason, *Economic Concentration and the Monopoly Problem* (Cambridge: Harvard University Press, 1957), p. 400.

decades. It is inappropriate because the failure of small companies may be caused as much by large firms with monopoly power as by large firms with genuine social scale economies. Whitney attributes the lack of price competition in farm machinery to the seasonal nature of farming, and touches lightly on International Harvester's dominance. But its seasonal nature has never precluded competitive pricing in agriculture itself, and, in at least one agricultural factor market, has often made for more intense price competition.[8] Whitney credits cigarette advertising with making possible mass production and distribution, and thus with probably reducing unit costs significantly (vol. II, p. 56). But neither Nicholls nor Tennant, who Whitney cites at length, found evidence of technical economies in multi-plant cigarette firms (vol. II, pp. 26–27). The chapter reviews referred to earlier identify similar instances where the strength of Whitney's evidence does not appear to sustain the force of his conclusions.

The Twentieth Century Fund's Committee on Antitrust Policy observes (Chapter 24) that the difficulty of disentangling the effect of antitrust policy from other causes should not prevent us from attempting the task. Whitney's attempt testifies to the size of the difficulty. The Committee also urges further studies along these lines. Perhaps future studies should aim for more modest goals. To ascertain by observation the general effectiveness of antitrust policy is one problem; to ascertain whether a specific court decree has attained the results the government sought, or should have sought, is still another. There appears to be no special merit in trying to solve the two simultaneously. A penetrating study of how a particular decree affected an industry may point out whether the government sought, and the court granted, an appropriate remedy. Many such studies would no doubt lead to wiser antitrust law administration and adjudication. But while a tabulation of the hit, near-hits, and misses scored by antitrust agencies may test and improve the accuracy of their diagnosis, it would provide no sound basis for generalizing on the effectiveness of antitrust. For this purpose the "survival" test is probably the most efficient test available. That is, given the objectives of the antitrust laws in terms of the upper limit they put on monopoly power and restraints of trade, how much of what apparently is outlawed still survives? Until these objectives are more clearly defined the results obviously depend a great deal on the tester, but most—including those who urge more (and less) ambitious objectives—would probably conclude that antitrust policy has been more effective than Whitney's approach shows it to have been.

In spite of the shortcomings in Whitney's method and analysis one may enthusiastically applaud this comprehensive study. It is a thoroughly readable and carefully documented treatment of antitrust activity since 1890 in twenty industries accounting for a large share of our national product. Its focus is on the results of this activity discernible long after the court decisions were featured in headlines and antitrust agencies have turned their efforts elsewhere. His projection of the decision as a continuing force in the market to which it was directed emphasizes the need for antitrust agencies to frame carefully the remedies they seek. His findings show that great legal victories can have much or little economic effect, depending in large measure on the remedy sought and won. These two volumes will be a standard reference on American antitrust experience for some time to come.

[8] *Cf.* Jesse W. Markham, *The Fertilizer Industry: Study of an Imperfect Market* (Nashville: Vanderbilt University Press, 1958), pp. 159–61.

COMMUNICATION

THE PARITY RATIO AND AGRICULTURAL OUT-MIGRATION

The fundamental issue of economic science is the problem of the world's poverty. This discussion is addressed to America's rural poverty, and the policy measure of farm price supports that is now used to palliate it.

Price supports provide relief for the farm problem but it is generally agreed that they are not a final solution. Neither, very likely, will respite be found in the presently inelastic farm market structure (unless Malthus should be suddenly vindicated). Instead, a politically tenable "long run" solution will probably have to be based on the redeployment of resources presently employed in agriculture.

Substantial quantities of capital, land, and labor are all used on farms. Capital cannot be readily removed from the farmers' production process, for this conflicts with the values of the machine-oriented American culture. Since there is a lack of alternative uses for land, reduction of its use, too, will probably prove impractical. Labor, however, can be transferred, and, as long as higher living standards and more leisure are aims of the society, can be employed advantageously elsewhere.

If only farm families, a minority in the United States, had an interest in solving the farm problem, there might be no strong economic arguments for treating it as a nationally important malady. However, even if the gains from more advantageous employment of farm labor were absorbed entirely in the raising of farm living standards, there is still reason to believe that the non-farm economy would choose to ameliorate rural indigence. Prevailing ethical structures, the interest in maintaining national virility for purposes of "defense," and aversion to the social problems and discontent often associated with poverty, provide motivations which may be assumed sufficiently present to justify treatment of the farmers' plight as a general social problem.

Two conditions have now been assumed—that society wishes to solve the farm problem, and that farm labor transfer is the most workable way to do this. This transfer poses a difficult policy question because of the geographical and cultural remoteness of many farms from alternative job opportunities. It presumably can be accomplished either by group action (limited in a democratic state to indirect measures such as removing educational differences, extending transitional relief, and providing for non-farm employment opportunities), or by reliance upon *laissez faire*.

If the group's role is treated as passive, the better incomes obtainable from non-farm jobs are supposed to attract farmers out of agriculture. Under this approach even a temporary amplification of the rural income problem might be desired as a means to a long-range solution. Here lies the crux of the controversy over price supports; the policy of waiting for economic pressures to autonomously correct the causes of the income difficulty stands counterposed to the desire to quickly mollify the harmful effects of the poverty.

There are two possible areas of rapport between these apparently conflicting "long run" and "short run" viewpoints. They could be reconciled if "short run" measures produced an undesirable income distribution, but this is contrary to the assumption that the society wishes to salve rural impoverishment. They could also be reconciled if price supports did not hinder the reallocation of labor resources deemed necessary for a permanent solution.

This second possibility can be studied empirically by examining the relationship between farm income levels and the rate at which labor has moved out of agriculture. It is customarily assumed that high farm income slows labor transfer from agriculture. If, however, absence of a negative correlation between income and migration could be shown, farm price supports could not be assailed for aggravating resource misallocation.

In this empirical examination it is first appropriate to consider whether the variables selected—the parity ratio and the farm out-migration rate—are representative of the effect of income changes on resource allocation. Parity ratios do tend to denote the real income level. While per capita farm income figures would possibly be a more accurate indicator, they are not the accepted parlance of American policymaking; they will, however, be used later in an

alternative test computation. This test, to skip momentarily ahead, yields substantially the same results as computations based on parity.

Farm out-migration does not encompass all labor outmovement; it excludes persons who continue to live on farms while working elsewhere. This labor transfer results, principally, from industrial decentralization. Since it is unlikely that farm price levels provide the impetus for this dispersion, there is reason for divorcing its associated job changes from the study. Therefore, the farm out-migration rate should adequately serve as the second variable.

Before assuming any cause-and-effect relationship between the two variables, outside influences which may have affected both variables must be taken into account. Unemployment and war could both act as such exogenous causations. During depressions a lack of alternative employment coincides with low farm prices, and during wars farm prices rise while there are strong legal and social compulsions for out-migration.

These effects can be removed by basing computations on periods when exogenous variables were constant—with periods of peacetime full employment, in this case. By eliminating depressions and the second World War with its years of aftermath, the principal exogenous effects since 1920, the period for which data are available, should be removed As a further refinement, to correct for subsequent military conscription without general mobilization, the net civilian out-migration rate will be used as the second variable.

This leaves, as a basis for further study, the parity ratios and net civilian out-migration rates for the periods from April 1922 to April 1929, and April 1946 to April 1956 (See table.) It is now possible to compute a correlation coefficient (r) from the data, and this yields +0.48, a figure which suggests that higher farm incomes have not deterred labor outmovement.

To confirm this result, some test calculations have also been performed. Using a one year lag (correlating out-migration with the preceding year's price), r equals +0.52. Using data from the area where income difficulties are most severe, out-migration from the Southern States correlated with parity prices yields an r of +0.52. Finally, correlating per capita farm incomes (adjusted for price level changes by the USDA farm living cost index) with out-migration produces an r of +0.54.

These tests tend to validate the original computation. Although the positive correlation is too small to support an assertion that high prices cause out-migration, it does defend support programs from attacks based on their alleged interference with the allocative mechanism of the "free economy."

Since these statistical results seem contrary to conventional presuppositions, the next analytical step will be an attempt to explain this divergence of theory and observation. This addendum appears justifiable, for the application of logic serves to test empirical results; inductively drawn conclusions are often reconsidered and subsequently disproved because they fail to conform to "common sense."

Conventional theory of resource allocation

PARITY RATIOS AND CIVILIAN AGRICULTURAL OUT-MIGRATION RATES FOR SELECTED YEARS

Year ended April 1	Parity[1] Ratio	Civilian[2] out-migration rate
1923	88	2.6%
1924	88	1.6%
1925	91	2.3%
1926	95	2.9%
1927	88	1.5%
1928	91	1.4%
1929	92	1.6%
1947	115	6.4%
1948	114	1.4%
1949	108	5.1%
1950	98	4.3%
1951	105	0.4%
1952	105	7.8%
1953	98	5.0%
1954	92	5.4%
1955	88	0.6%
1956	83	1.3%

[1] Based on data from U. S. Department of Agriculture, Agricultural Marketing Service, *Agricultural Market Prices*, October 15, 1956, pp. 45–46.

[2] Based on data from U. S. Department of Agriculture, Agricultural Marketing Service, *Farm Population . . . Migration to and from Farms, 1920–54*, p. 9; *Farm Population, Estimates for 1955*, p. 4; *Farm Population, Estimates for 1956*, p. 4. (Since the data for 1954 to 1956 were not expressed by USDA in terms of a civilian outmigration rate, these rates were computed by adding an estimated rate of military inmigration to the total rates of net outmigration. The estimates were based on the changes in the size of the total armed forces, changes which were negative and small during the three years.)

holds that labor resources will shift from areas of surplus to areas where higher incomes indicate a relative shortage of labor. This "pure" theory is postulated on a "frictionless system" and the assumption that individuals will always act in the manner that will maximize their incomes. Of course, those who endorse this theory realize that its postulates are not entirely realistic, but they do implicitly suggest that the assumptions represent reality in an approximate, workable way.

The empirical evidence, it must be noted, has not shown the conventional theory to be entirely inappropriate, since a constant farm income deficiency has been associated with an almost constant out-migration. Instead, explanation need only be sought for the fact that changes in the *degree* of income pressure have not created corresponding changes in out-migration rates. The issue does not resolve to the logic of the "pure" theory of resource allocation but to its applicability in American agriculture, to whether its postulates are attuned to actuality.

There are at least three explanations for the absence of negative correlation between parity and out-migration. Some farmers are insulated from changes in income differential by non-cash operation and, in lessening instances, by ignorance of alternative opportunities. Many others, whether through an unconscious habituation to their occupational status or a rationally derived preference for farm life, do not chose to move, even though they could better their incomes. Still others wish to move, but are barred by the costs and uncertainties associated with migration.

It is to this third group that the occurrence of some positive correlation can probably be ascribed. High farm prices increase the ability to surmount transitional barriers by facilitating property disposal, instilling confidence, providing funds for movement, and increasing the number of jobs available in outlying towns that are easily reached by migrating farmers.

Admittedly, these explanations are not in exact, measured quantities. Their present lack of quantification does not preclude the possibility that they are correct, however; and it is hoped that, eventually, they may be more thoroughly tested by empirical studies. They do, however, in a general way, explain the significant divergence of conventional postulates from reality in agriculture.

SUMMARY

An absence of negative correlation between farm prices and farm out-migration has been shown, and an attempt has been made to reconcile, deductively, this conclusion with the existing body of economic theory. The study suggests that farm income maintenance does not impede the movement of labor into non-agricultural jobs, and that the pricing system, alone, will not solve the farm problem.

Glen Allen Mumey
University of North Dakota

BOOK REVIEWS

The Measurement of Utility. By Tapas Majumdar. New York: St. Martin's Press, 1958. Pp. xiv, 149. $3.00.

Dr. Majumdar classifies the writings he reviews into five schools of thought, chiefly according to their use of introspective or behaviorist methods and of ordinal or cardinal measurement. He defines the method of introspection as "the procedure of admitting a hypothesis which is not immediately observable, but which seeks to *explain observable facts*." It works with a hypothesis "which is not itself falsifiable, but which has falsifiable consequences" and "has no place for introspection as a means of testing hypotheses about facts." Behaviorism, on the other hand, seeks no explanation or understanding beyond precise and accurate description and insists on hypotheses amenable to empiric falsification directly and not merely through their implications. (This distinction seems to differ from the more usual one in terms of the types or sources of facts considered admissible.) As for the ordinal-cardinal distinction, Majumdar points out its fuzzy or conventional nature and discusses the different concepts of cardinality.

Majumdar rejects the first school, the introspective cardinalism of Marshall and Robertson. To assume a constant marginal utility of money as the unit of measurement is self-contradictory in a world of more than one commodity besides money. The income and substitution effects of a price change cannot both be explored. Cardinality merely "in principle" is operationally indistinguishable from ordinality. Majumdar criticizes the third school (the behaviorist or revealed-preference ordinal approach of Samuelson) as unable to deal with genuine indifference and as unable to state a law of demand except when the income-effect of a price change is known to be positive. Furthermore, behavior may sometimes conceal rather than reveal preference, as in certain applications of strategy in voting. The fourth school (the behaviorist cardinalism of Morgenstern, Neumann, Friedman, and Savage) does not even claim to measure utilities so that they could be added or interpersonally compared. Finding this approach helpful in practice only for predicting a man's choices among chances to win money prizes in games with known odds, Majumdar expresses amusement at the claim that it has a "richer empiric content." The introspective-cardinal-revivalist fifth school of W. E. Armstrong takes the smallest barely perceptible difference between two expected utilities as the unit of measurement that makes possible the addition of preferences and the formulation of group preference. Majumdar deftly shows that this approach tacitly assumes what it claims to prove.

Majumdar gives his allegiance to the second school. This, the introspective-ordinalist or indifference-preference approach of Hicks and Allen, makes room for the introspective concept of indifference and is able to explain even instances of the Giffen Paradox. The latter, as Majumdar recognizes, is an advantage only from the introspectionist viewpoint, since the outweighing of a substitution by an income effect is hardly observable by behaviorist methods.

It is not clear to this reviewer why one must join a particular school and reject the others. Different approaches may be useful for different purposes and may lead to further progress.

Majumdar's completely nonmathematical and rather elementary exposition employs a pleasant and flowing English. Surveys of this kind are welcome in economics, since the essential unity of the subject makes especially regrettable the threatened loss of contact between specialist workers on the different frontiers. Majumdar's work serves as an expertly annotated bibliography, helping the uninitiated reader judge whether it is worth his while to delve further into the rarefied theories reviewed. This meritorious contribution, which contains numerous original insights (regarding, for instance, the additivity and comparability of individual welfares), testifies to the genuine professional competence of its author.

LELAND B. YEAGER
University of Virginia

International Trade and Economic Growth: Studies in Pure Theory. By Harry G. Johnson. Cambridge, Mass.: Harvard University Press, 1958. Pp. 204. $4.00.

This book is a collection of eight essays, almost all of which have already appeared in various economic journals. It is not, therefore, in any degree of comprehensive treatment of the rela-

tionship of international trade to economic growth as might be supposed from the title. As anyone who has followed Professor Johnson's writing would expect, mathematical presentation plays a central role. With the exception of the sixth essay it is impossible to follow the analysis except through the detailed study of numerous complex equations or geometric presentations. But for the careful student these essays will be very valuable in suggesting new approaches to specialized parts of the problems of international trade and economic growth. Comparisons of the results which can be obtained by varying an almost infinite number of assumptions also provide a worthwhile contribution of the book.

The first essay, *Factor Endowments, International Trade and Factor Prices*, attempts to create an analytical framework for examining the part played by variations in the capital-labor ratio caused by factor price changes as limited by technological patterns. The practical usefulness of the analysis is seriously limited by the difficulties encountered when more than two productive factors are involved.

Professor Johnson, in the second essay, *Optimum Tariffs and Retaliation*, undertakes to demonstrate that under certain conditions it is possible for a country to gain through a restrictive tariff even though the other country retaliates. The analysis makes use of a set of community indifference or offer curves. The assumptions upon which the author bases his conclusions are highly abstract and very difficult to associate with any actual international trade conditions.

The third essay, *Economic Expansion and International Trade*, consists largely of a classification of the effects upon trade which may result from various types of growth and its effects upon supply and demand elasticities. Perhaps the most significant contribution of this essay is the emphasis it places upon the very large number of assumptions which can be made, each yielding a different result.

The conclusions of the fourth essay, *Increasing Productivity, Income-Price Trends and the Trade Balance*, that the effect of increased productivity in the United States upon the balance of payments will depend upon price and income elasticities for internationally traded goods, might have been reached by much less abstract mathematical treatment.

In the fifth essay, *Equilibrium Growth in an International Economy*, the basic Harrod and Domar growth model is modified to relax the assumptions of a closed economy.

The sixth essay, *Towards a General Theory of the Balance of Payments*, provides a welcome relief from the long series of mathematical formulae. It establishes an abstract model in which any balance of payments disequilibrium is analyzed as resulting from changes in total expenditures, savings, employment levels, and switches in expenditure between foreign and domestic expenditure. Such a model has the advantage of avoiding fallacies which result from the too narrow analysis of international account receipts and payments, but it has the disadvantages always inherent in the macro-approach of including such a mass of material that careful analysis of segments of the economy may become difficult.

In the seventh essay, *The Transfer Problem and Exchange Stability*, Professor Johnson shows the close relationship between the problems of capital transfers and the more general ones of maintaining exchange stability. His use of numerous mathematical formulae reveals the importance of the various assumptions which can be made relative to saving propensities, capital transfers, exchange rate changes, and price or income elasticities in each country for both imports and exportable goods. The book concludes with a very brief presentation of the multi-country multiplier theory.

These essays are definitely not for the casual reader, but for the careful student they will contain many suggestions of methods for approaching numerous unresolved issues in international trade theory. Professor Johnson's highly theoretical treatment also gives notice to the economist dealing with policy questions that the innumerable assumptions upon which he bases his recommendations require continuous re-examination.

R. Murray Havens
University of Alabama

Prosperity and Depression: A Theoretical Analysis of Cyclical Movements. Rev. ed. by Gottfried von Haberler. Cambridge, Mass.: Harvard University Press, 1958. Pp. xviii, 520. $6.00.

Haberler's *Prosperity and Depression*, marshaling the best of the concepts up through the late 1930's and written on the threshold of mod-

ern business cycle theory, remains a work of classic stature. The book had its inception in 1930 in a dual project of the League of Nations: Haberler undertook an analysis of existing cycle theories; and in turn his work became the source of hypotheses for statistical testing by Tinbergen in an important piece of econometric cycle research. (J. Tinbergen, *Statistical Testing of Business-Cycle Theories: A Method and its Application to Investment Activity*, Vol. I, and *Business Cycles in the U. S. A., 1919–1932*, Vol. II. Geneva: League of Nations, 1939.)

In the first (1937) edition, in Part I Haberler surveyed the leading business cycle theories and subjected them to logical testing; and in Part II set forth a synthesis which incorporated the best of the explanatory elements (those which survived the rigorous treatment in Part I) together with his own ideas. It is important to note in the book's subsequent evolution that the draft of the first edition was finished in the summer of 1936 after the appearance of Keyne's *General Theory* earlier in the year, so that only a few references were made to the latter in the footnotes. In the second (1939) edition Chapter VIII, a discussion of the new Keynesian literature, was added to Part I. Subsequently, in the third (1941) edition, Part III appeared to reflect Haberler's further consideration of Keynes and his continuing impact on business cycle theory. In the new and revised fourth edition, the old material in Part III has been replaced by a new chapter on Monetary and Real Factors Affecting Economic Stability (based on a paper read at the first Congress of the International Economic Association held in Rome in 1956); and two appendices now contain "Notes on the Present State of Business Cycle Theory," (first published in *Wirtschaftstheorie und Wirtschaftspolitik*, 1953) and "The Pigou Effect Once More," (reprinted from *Journal of Political Economy*, June, 1952).

Although the content of the book is so well known, it still seems appropriate twenty-two years later to assess its significance. Part I, with its exhaustive analysis—in the well-known Haberler manner—of a mass of business cycle literature up through the late 1930's, and its celebrated classification of theories, continues to influence the writing of texts in the field and the teaching of seniors and graduate students. The synthesis in Part II, of course, has weathered somewhat with time in its particulars as well as in the sense that the task of the cycle theorist has become much broader for his model must explain secular growth as well as the causes of fluctuations. But even in this context, it should be pointed out that Haberler's multi-cause framework in Part II contains, for example, a version of the interaction of the multiplier and the accelerator (p. 317) developed independently of that of Harrod in *The Trade Cycle* (1936); and Haberler (pp. 366–367) also anticipated what later became the Harrod-Hicks theory of the upper turning point which describes the end of an upswing to encounters with the full-employment growth ceiling.

Finally, in the new material in Part III of the fourth edition, Professor Haberler laments what he regards as the tendency in modern cycle theory to underestimate the significance of monetary factors and to overplay the role of the real factors, a position with which this reviewer finds little sympathy. In the past, business cycle theory suffered from the neglect of the real forces; and indeed, only when we properly understand the role of the real factors do we understand the monetary factors at all.

Joseph Airov

Emory University

Microeconomic Theory: A Mathematical Approach. By James M. Henderson and Richard E. Quandt. New York: McGraw-Hill Book Company, 1958. Pp. xii, 291. $7.50.

This book covers the usual topics presented in a first-year graduate course on price-distribution theory. After a brief methodological introduction, the authors study consumer behavior as the basis of demand. In further analysis the competitive models are developed, first for the firm, then for the industry, and finally for the economy as a whole. Then the authors relax the competitive assumptions at the firm level in order to study the varying forms of imperfect competition. The last two chapters deal with welfare economics and with optimization through time. An appendix, which should be read first, summarizes the mathematical tools employed in the text.

In addition to rigorous verification of the theory in existing textbooks the writers provide at least four noteworthy extensions. On page 29 we learn, other things being equal, that the substitution effect on commodity X which results from changing the price of commodity Y is the

same as the substitution effect on commodity Y which would result from an identical change in the price of commodity X. On page 66 we find that the satisfaction of Euler's Theorem is a sufficient but not a necessary condition for factor payments to exhaust total product, for even when production functions are not homogeneous this result occurs whenever the first and second order conditions for profit maximization are fulfilled and the entrepreneur's maximum profit equals the normal return. Pages 113–115 and 151–153 contain interesting analyses of dynamic stability conditions which are price theory analogues of Samuelson's work on the interaction of multiplier and accelerator coefficients. Most of the concluding chapter is devoted to extending the Hicksian multi-period consumption and production studies.

Aside from a misprint in the last equation on page 167, there are no obvious errors in the book. However, two general criticisms should be advanced. In the first place the authors have neglected some important aspects of microeconomic theory in their effort to keep the text down to "handbook" size. For example, consumers' surplus is dismissed in a footnote to page 22 and is ignored altogether in the comparison of private with social benefits which spans pages 214–217. Another omission is treatment of storage costs. The authors excuse themselves from this obligation in discussing the "very short period" on the grounds that "the present analysis is static." But none of the sections on dynamics resurrect the matter. Short shrift also is made of factor market study. There is casual suggestion that duopsony, oligopsony, and factor differentiation exist, but the analyses are restricted solely to competition and monopsony. The book is too short to survey its field fully. As a result one sometimes has the feeling that the authors are using 1958 tools on 1933 theory.

The second criticism involves matters of perspective. One such mistake occurs on page 65 where the authors are disturbed by the fact that both the long-run average revenue and long-run average total cost functions of a competitive firm are horizontal straight lines. Thus, price can exceed, equal, or be less than cost for all quantities of output, and only if price equals cost with an arbitrary scale of operations imposed upon the firm will total product just be exhausted by the factor payments. The authors conclude that "the analysis of the marginal-productivity theory of distribution is misleading, if not erroneous." This judgment is rash for two reasons. In the first place the problem never involved the long-run cost function. The marginalists were concerned with the distribution which resulted when the low point of short-run average total cost was attained for plants of optimum size under long-run competitive conditions. At this point the firm's production function is homogeneous of degree one for infinitesimally small variations of output. In the second place product prices, factor productivity, and factor remuneration are interdependent variables, so related by the process of attaining the equilibrium (which the authors consider a chapter later) that differences between price and cost were ruled out. If Henderson and Quandt choose to abstract from the equilibrium conditions which gave rise to the application of Euler's Theorem in economics, they should blame their own outline, not marginal productivity theory, for the bizarre results achieved.

Richard A. Labarge
Southern Methodist University

Decreasing Costs as a Problem of Welfare Economics. By C. J. Oort. Amsterdam: Drukkerij Holland, N.V., 1958. Pp. xii, 187. $1.50.

From the time of Marshall and Pigou until such current writers as Scitovsky, Meade, and Bator, decreasing cost has posed an insoluble problem in welfare economics. Specifically, at the set of prices that would properly ration the welfare maximum quantities, neither Lerner-Lange civil servants nor profit-maximizing entrepreneurs would produce the required bill of goods. In looking to the margin, an error is made: both the invisible hand and its contemporary equivalent, the IBM, are myopic. Professor Oort has only reinforced the negative conclusions previously reached. To quote: "... the problem of finding an optimal regime of a decreasing cost industry ... has no general solution ... A final solution ... can be found only by a new approach to the entire theory of welfare economics" (pp. 149–50).

The writer does not provide a "new—new" welfare economics, but he does present an interesting exposition and criticism of welfare theory, especially as it applies to public utility price-output decisions. In the first chapter, Oort reviews the Paretian marginal conditions for optimum resource allocation. Following several

current writers, he strongly emphasizes that the allocation of resources and the distribution of income are not independent components of social welfare. Indeed, they are essentially related, so the Paretian marginal requirements are only necessary, but not sufficient, conditions for a welfare maximum. Without a complete specification of distributive norms, however, there are certain weak criteria of welfare that permit limited statements about alternative economic organizations. These weak criteria "save" welfare economics, as it were, by showing the desirability of attaining a Pareto-optimal position. That is, if the society is in a Pareto non-optimal situation, movement to a Pareto optimum will increase the total social product. Hence the product can be redistributed so that no person suffers from the reorganization.

The second, and most interesting chapter, is devoted to problems of non-marginal adjustment. Suppose that a society is in a Pareto-optimal situation. Could another, socially preferable Pareto optimum be reached by non-infinitesimal adjustments, including the optima in which production of one or more commodities is discontinued? An associated question involves the criterion to be used in assessing the significance of non-marginal reorganizations. The questions pose the problems of non-marginal adjustments.

Oort joins a procession of distinguished economists (e.g., Lerner, Coase, Henderson, Reder) in suggesting the cost-benefit criterion: an output is worth producing if and only if the consumers of the output could be made to pay, or in fact do pay, the total cost of producing the output. Alternatively stated, an output should be produced if a perfectly-discriminating monopolist could recover full cost of production. Next one must ask how the cost-benefit criterion is to be applied. Oort suggests two methods, the "profitability test" and "independent judgment." The former states that every output must carry a total price (i.e., marginal cost plus lump-sum levy) that covers full cost. Oort shows that this test is applicable only in certain situations and that, consequently, decisions must frequently be made by independent judgment of government officials.

The remainder of the book is devoted to decreasing cost and a limited endorsement of marginal-cost pricing. The author contributes but little that is new, following quite closely the works of Samuelson, Little, and Vickrey. There are a few minor errors, the discussion of decreasing cost is inadequate, and one is kept wondering whether Oort's vaguely explained social indifference curves meet the requirements that Samuelson has recently stated. Nevertheless, the book serves an important purpose by stating the most recent developments in welfare economics without recourse to mathematics. Furthermore, Oort is very conscientious in imposing the test of market practicability on each standard that he sets. The empirical feasibility of his suggestions is refreshing. But the book is of interest only to those who are specialists in the area; it is especially to be recommended to economists who are interested in the pricing policies of public utilities.

C. E. Ferguson

Duke University

Price Theory. By W. J. L. Ryan. New York: St. Martin's Press, 1958. Pp. vii, 396. $7.50.

Price Theory is organized along conventional lines. The first four chapters develop the theory of relative product prices under the guise of the purchase plan of the household and the sales plan of the firm. Indifference curve analysis is stressed throughout although demand and unit cost curves are derived and used where appropriate. Utility is omitted as a basis for demand curves and some may consider this a loss to the student.

In chapters 5 and 6 the purchase plan of the firm and the sales plan of the household are considered, thereby laying the groundwork for the determination of relative factor prices in chapter 7. The succeeding chapter briefly compares partial and general equilibrium analysis and provides a simple Walrasian model of the latter.

Professor Ryan examines various market situations in the next three chapters. They are presented as classifications useful primarily in gauging the efficiency of the price mechanism. Rigorous theoretical analysis is tempered with specifically related institutional phenomena when warranted. Of particular merit is the treatment of oligopoly—which embraces the Cournot model, three leadership models, and a collusive situation—and bilateral monopoly. The brief final chapter is devoted both to tying up loose ends, as it considers the multi-product firm and average cost pricing, and to acting as a succinct introduction to the newer areas of linear programming and the theory of games.

On the basis of this general sketch of common subject matter, one might be inclined to conclude that another ordinary text has appeared. This would be an erroneous judgment because Professor Ryan has produced a novel text—novel because of its general excellence. The content of each chapter exhibits a well-conceived plan of development. There is a laudable clarity of presentation which rests on verbal and graphic explanations supplemented at rare intervals by numerical examples. A most important feature is the practice of presenting the material in a format resembling that used in scientific inquiry. A problem is set forth and the reader is led step by step through the logical development of the economic tool required for its solution. This is exceedingly well done and should provide a valuable learning experience for the student who will not only obtain a thorough grounding in microtheory but also a stimulating exercise in logic.

A question arises concerning the appropriate level at which the text should be used. A hard and fast answer cannot be given, but it can be said that the student must have a keen interest in the study of economics or else he will be dismayed by the rigor of this book. For this reason it is probably most suitable for a second theory course. Wherever used, it will be a rewarding text.

James E. Hibdon
Georgia State College of Business Administration

The Dynamics of Supply: Estimation of Farmers' Response to Price. By Marc Nerlove. Baltimore, Md.: Johns Hopkins Press, 1958. Pp. ix, 267. $5.00.

The author states that "this book reports research undertaken in an attempt to estimate the elasticities of supply for corn, cotton, and wheat. It deals primarily with the role which farmers' expectations of future relative prices play in shaping their decisions as to how many acres to devote to each crop." Emphasis is placed on acreage decisions of farmers. While such decisions are recognized as only one facet in obtaining information as to supply functions, they are considered the most accurate measure of probable production for any given agricultural crop.

The basis for this book is developed in two chapters on theoretical considerations. These review statistical and dynamic problems associated with determining elasticities of supply.

A chapter on the application of this work to agricultural commodities briefly reviews the writings on the subject of H. L. Moore, Holbrook Working, John D. Black, B. B. Smith, Louis Bean, T. B. Manny, John M. Cassels, R. L. Mighell and R. H. Allen, George Kuznets, Robert Walsh, and R. L. Kohls and Don Paarlberg. According to Nerlove these writings suggest that farmers respond very little to prices in planning their acreage and output. He also explores the implications of technology, place of expectation, models, and areas of difficulty. Emphasis on the latter point particularly deals with the neglect of dynamic considerations.

Available data for Nerlove's analysis are reviewed and he finds four sources of errors in measurement which he groups as follows: (1) those of a conceptual nature, (2) those due to voluntary misrepresentation, (3) those traced to inadvertent misrepresentation, and (4) those resulting from incompleteness of available data.

This is followed by three chapters on the crops that serve as the basis for the analysis developed in this book—corn, cotton, and wheat. These chapters, respectively, consider: general characteristics of these crops, geographical characteristics, and the nature of related governmental programs.

The last two chapters are devoted to statistical analysis. The first considers short-run elasticities, and proceeds on the assumption that the difference between long-run and short-run equilibrium is negligible. The second directs attention to various methods of estimating expectations in adjustments of farmers and problems in presenting statistical results.

Dr. Nerlove is to be complimented for his contribution to a better understanding of various forces back of supply. He has well pointed out that the problems are many and that the path is treacherous.

It might be, however, that his efforts would have been more realistic had he attempted to fashion tools that would give a better understanding of forces affecting supply since 1933—a period in which admittedly institutional factors are of far greater importance. Such probings might have made further contributions toward a greater realization that in his intention to plant the farmer is primarily influenced by future expectations. Those relationships that prevail with respect to a previous year or period may be little more than coincidental details, sta-

tistical analysis notwithstanding. Nerlove, too, has the problem of communication in presenting technical and detailed findings in economics. To be really effective these findings must be expressed in readily understandable terms.

MARTIN A. ABRAHAMSEN
Farmer Cooperative Service—U.S.D.A.

The Strategy of Economic Development. By Albert O. Hirschman. New Haven, Conn.: Yale University Press, 1958. Pp. xiii, 217. $4.50.

The purpose of this interesting book is to develop a frame of reference which will facilitate the making of effective strategic decisions concerning economic development. The author contends that economic backwardness cannot be explained in terms of the absence or scarcity of any factor of production. He alleges that all requisites of economic development are very likely to exist even in an underdeveloped economy, although they may be hidden, latent, badly scattered and, sometimes, misdirected into nonproductive pursuits (e.g., entrepreneurial talent utilized in speculation). He visualizes the problem as the mobilization of these undiscovered and undeveloped factors of production. The suggested solution is a deliberate strategy of creating economic and political pressures and other inducements which virtually force the investment decisions necessary to mobilize the latent human, monetary, and material resources for economic development. After the problem and solution have been stated in these terms, the remainder of the book becomes a search for appropriate inducement mechanisms. Unbalanced growth, which creates a pressure to restore balance to the economy, is found to be the most powerful of the inducement mechanisms. To a lesser extent, the author finds that inflation, balance of payments pressures, and even population pressures may serve as useful inducement mechanisms to promote economic development. Thus, he imputes a vital and constructive role to pressures and disturbances usually regarded as unmitigated economic evils.

By the author's own admission, this book has not been properly documented; therefore, final judgment of his hypotheses must be reserved, pending verification. Meanwhile, few economists will be willing to accept these hypotheses, many of which contradict accepted economic beliefs, without more or less extensive qualification and many mental reservations. Nevertheless, the book is well worth reading, not only for its original and thought-provoking approach to developmental problems, but also for the healthy skepticism which the author displays. The manner in which Hirschman has rejected economic dogma in favor of boldly original generalizations makes this book a very valuable addition to the growing literature dealing with economic development.

LEWIS E. HILL
Clemson College

Federal Budget and Fiscal Policy, 1789–1958. By Lewis H. Kimmel. Washington, D. C.: The Brookings Institution, 1959. Pp. x, 337. $5.00.

The object of this book, according to the author, "is to provide the background for an understanding of current budget and fiscal policies." Again quoting the author, it is an underlying premise of the book that "the great majority of ideas in economics and finance have a time-and-place significance." Given these targets, Kimmel's book stays on course wonderfully well.

This is essentially a descriptive book. The analysis is woven through the various chapters as the chronological evolution of fiscal policy thought is traced. The going is easy and pleasant and this should make an excellent companion volume for the Brookings *Introduction to Economic Reasoning*, which, it is understood, has gone very well with adult education groups of serious bent. It should also provide a useful addition to the list of supplementary readings for the economic principles course.

We may smile at the plight of the Secretary of the Treasury in 1837 who was concerned about getting government surpluses back into circulation in the absence of any outstanding public debt. And in 1885 President Arthur is quoted as holding that rapid extinguishment of the national debt was more a cause for serious apprehension than for congratulation. And among Presidential quotes Kimmel's resurrection of Coolidge's succinct platform: "I am for economy. After that I am for more economy," revives the "normalcy" theme of that decade. Kimmel devotes a considerable amount of space to what he calls the Roosevelt Era and the search for a new budget theory.

Throughout the book the author is at some

pains to demonstrate how the accepted fiscal theory at any moment is a composite reflection of the times and of public and expert opinion then prevailing.

It is interesting to reminisce with him on the great debates which have centered around questions of budget and fiscal policy. The book is well written, interesting, and sound. Students of public finance and business cycles will find little new in it, but it should be an extremely useful book for lay readers and adult study groups.

MAURICE W. LEE
University of North Carolina

Fiscal Policy and Politics. By Paul J. Strayer. New York: Harper & Brothers, 1958. Pp. vii, 305. $4.00.

Strayer's book contains a lucid evaluation of the influence of political pressure groups on fiscal policy. The dilemma of reconciling public expectations for high level employment and high income with the inability of government to meet these expectations is graphically presented. The first six chapters are as concise and informative a review of our fiscal policy from 1933 to 1958 as one could find anywhere.

The book takes issue with institutionists and those favoring a "controlled economy." A "model" narcosis grips many present-day economists, Strayer explains, which encourages them to adopt fiscal policy decisions in conformity with the models. The economic ideals of pressure groups and regional politicians may be so far at odds with proposed fiscal policy that dissension is inevitable. Moreover, Strayer shows that many of these fiscal policy decisions are so poorly presented that the man on the street fails to appreciate or understand the proposed changes and thus refuses to accept them. He points out that this problem reaches into state and local levels.

The book denies the premise that a skillfully planned inflation can accomplish such diverse goals as full employment and a balanced budget. He believes that such goals are unattainable unless avenues of information are considerably broadened and the caliber of leadership is greatly improved. He suggests that the desires of the public for record high levels of income induce economists to embrace dangerous fiscal decisions.

Strayer concludes that government finance will continue its dominant role in our economy and that the expansion of government functions will continue, but that this increased responsibility will be difficult to handle wisely. There is no doubt that government fiscal policies moulded by pressure groups can seriously affect national productivity and individual freedom. He believes inflation to be unacceptable because it destroys the capacity to govern, etc. The best hope, he feels, lies in the dramatic emergence of a philosophy of government by business leaders. The influence of constituents on legislators can be offset by attracting more capable people to government who can place these opinions in proper perspective with administrative fiscal policy.

The book is an excellent reference for economic theory, fiscal and monetary theory, and public finance courses. It is extremely readable and is recommended for professors as well as students in these courses.

WILLIAM G. HEUSON
University of Miami

Antitrust and American Business Abroad. By Kingman Brewster, Jr. New York: McGraw-Hill Book Company, 1958. Pp. xxiv, 509. $12.00.

This project was conceived by the Special Committee on Antitrust Laws and Foreign Trade of The Association of the Bar of the City of New York. Professor Brewster undertook direction of the study at an early stage, and the conclusions published herein are his own.[1] His analysis and ideas, however, have been through the furnace of two weeks' discussion with a group of economists, and of "exhaustive and sometimes exhausting justification and rejustification" in discussions with members of the Special Committee.[2] What has emerged is an exceptionally perceptive, even-tempered and comprehensive exposition of our antitrust policy in foreign commerce, and of the considerations impinging on it at every point.

The core of the work is a consideration of each of 48 kinds of business arrangements. General

[1] The Special Committee's own views are presented in a report of May 29, 1957, "National Security and Foreign Policy in the Application of American Antitrust Laws to Commerce with Foreign Nations."

[2] The study was financed by grants from the Merrill Foundation for Advancement of Financial Knowledge, requested by the Special Committee.

categories include marketing agreements among U.S. exporters, marketing agreements of a single U.S. exporter with foreign concerns, patent licenses, arrangements to compensate a U.S. firm for conveying unpatented information to a foreign concern, and participation of a U.S. firm in a joint enterprise abroad. Under most of the general headings several distinct situations are accorded separate treatment. The chapter on patents recognizes 14 kinds of restraints, among them output agreements, agreements on future patents, reciprocal patent exchanges, and grant-backs. A typical section calls attention to the business considerations prompting the restraint and to reasons why its legality may be questionable. Where the lawfulness of the restraint appears to depend on the whole context of the situation, illustrations of presumptive legality and of presumptive illegality are set forth, and then the considerations important to any determination in the middle ground. This exposition is supplemented by an intensive review of antitrust sanctions and remedies, and by three appendices: "The International Reach of American Regulatory Legislation Other Than the Sherman Act" by Donald Trautman, "The Foreign Aid Programs and the United States Government's Antitrust Policy" by Steuart Pittman, and "Problems of Foreign Discovery" by David Gill.

Economists especially will be interested in a chapter reporting and evaluating the views of persons in seventy-odd firms with experience in foreign business arrangements. As there have been relatively few adjudicated cases, much uncertainty exists as to the law's reach and interpretation. Brewster finds such uncertainty more troublesome to business than the law's clear-cut prohibitions. The principal matters in which businessmen feel antitrust considerations unduly hampering are acquisitions, joint ventures and restraints attached to licensing, the licensing of American know-how in particular. Very large firms are more conscious of the antitrust laws' reach. However, Brewster believes that in many cases they have less inducement to take action that clearly is unlawful.

The final third of the book is devoted to future policy. Chapter 12 begins by considering the desirability of restraints for the protection of "infant industries," and the arguments for and against "private government." Next follows a discussion of ancillary restraints and the criteria for implementing the "rule of reason." The chapter closes with an evaluation of the respective claims for effectiveness and fairness of the two rival considerations in interpretation of the antitrust laws, namely, flexibility and certainty. The treatment gains much from the explicit recognition of such practical considerations as the rationing of the prosecutor's purse and staff, and the difficulty of proving intent and effects. Among the ways of achieving more certainty as to what is and is not permissible, three obvious methods are clearances, exemptions and administrative rulemaking. Each is treated at length in chapter 13.

Brewster's own conclusions are deferred to chapter 15. He rejects "a regime of advance clearance" as adding to the difficulties antitrust occasions in doing business with foreigners. His principal recommendation is a "jurisdictional rule of reason" to be achieved by an *ad hoc* weighing of conflicting interests. A measure of certainty would be achieved through having the Department of Justice delineate areas of presumptive legality and illegality in a public advisory statement for the guidance of its staff. But a large number of restraints which businesses wish to incorporate in their agreements would be neither presumptively lawful nor presumptively unlawful. Under Brewster's proposals their legality would be threshed out in terms of a broad range of considerations. Inevitably, major determinants of our actual policy in this area would be the ability of the antitrust agencies to obtain the required evidence, and the amplitude of their resources for the investigation and trial of cases.

Brewster also calls for repeal of the Webb-Pomerine Export Trade Act, although he concedes that further inquiry may justify its extension for specific industries. He argues that a literal interpretation strips the Act of real content, while a loose interpretation involves an improper relaxation of the antitrust laws. In this recommendation, however, he is not supported by a single member of the Special Committee of the New York Bar Association. Finally, Brewster suggests that the President be given statutory authority to postpone antitrust prosecution or to grant antitrust exemption where he judges such action essential to the national security. Not only does Brewster stress that "essentiality" be the test, but he would insist on three conditions. The matter must be of sufficient moment to warrant consideration by the National Secu-

rity Council. Periodic reports to Congressional committees (in executive session) would be required, rejustifying the concession and demonstrating that the exempt arrangement is in fact consistent with the public interest. The President also must reconsider the need for the concession every three years.

The book is indexed by statutes, by treaties, by cases, complaints and consent decrees, as well as by topic. Most of the chapters are followed by annotated bibliographies which should prove extremely useful.

FRANK J. KOTTKE

Washington, D. C.

Economics of Mental Illness. By Rashi Fein. Joint Commission on Mental Illness and Health. New York: Basic Books, 1958. Pp. xx, 164. $3.00.

This small volume covers both more and less ground than its title might suggest. On the one hand, its primary purpose is to answer only a limited economic question—what is the total cost of mental illness in the United States? On the other hand, the concepts of cost developed here are applicable to many other health and welfare problems besides mental illness. The book, therefore, contributes—most valuably too, in this reviewer's opinion—to the sparse and rather confusing literature dealing with definition and measurement of the economic costs of sickness.

Dr. Fein distinguishes two types of economic cost to society arising out of mental illness. He calls these *direct* and *indirect* costs. The concept of direct cost is relatively straightforward; it consists of actual expenditures made by governments, private organization, and individuals for the treatment of mental illness. It comes as something of a shock to learn that such expenditures currently exceed $1.7 billion per year—of which a staggering $1.5 billion comes from tax funds.

Indirect cost is the reduction in output that society suffers because some of its members are mentally ill and therefore excluded from productive employment. This loss is clearly as much a part of the burden of mental illness as is direct cost, although it is not always recognized as such. In attempting to define and measure this elusive quantity, Dr. Fein has boldly grasped a nettle from which many economists have preferred to keep a safe distance, if not to pass by altogether.

Some of the assumptions used by Dr. Fein in his estimates of indirect cost might certainly be disputed, but this in no way detracts from the value of his clear and literate explanation of what the choices are and what each entails. His method, broadly speaking, is to multiply the number of potential producers among the mentally ill by a median (why not average?) earnings figure, thus yielding a measure of output (more accurately, labor-product) lost. The estimated indirect cost of institutionalized mental illness for the year 1952 is $700 million; this represents the value of extra output that might have been produced in that year had mental illness miraculously been wiped out on January 1st. The present value of all future earnings of those admitted to mental institutions in 1954 is estimated at $1.9 billion.

The statistics prove, beyond doubt, that mental illness is expensive. The conceptual discussion, which takes up a good part of the book, raises intriguing prospects for additional directions in health economics. For example, studies of a similar type for a number of diseases would provide a more rational basis than hitherto available for allocation of research and preventive expenditures among different types of sickness. The distinction between direct and indirect costs could also foreshadow a sort of "return on investment" analysis of health problems, in which the burden of expenditures for prevention and cure (i.e., direct cost) may be compared with resulting economic benefits (i.e., reduced indirect cost).

In short, this stimulating book throws a very useful light in a dark corner of the customary economic analysis of health problems.

F. d'A. COLLINGS

U. S. Public Health Service

International Resources and National Policy. By Olin T. Mouzon. New York: Harper & Brothers, 1959. Pp. xiv, 752. $7.50.

Olin Mouzon addresses his attention to the whole picture of world production resources. He appraises it in terms of the public policy of the United States. Freedom and security are espoused as the indivisible aims of policy. Strength is seen as an essential of both, and underlying strength is production.

The entire analysis is distinguished by a keen appreciation of military, as well as economic, se-

curity. For an American economist, Professor Mouzon's work reflects an exceptional background of study in this area. He relates the military problem to diplomatic developments and to underlying economic and moral forces.

Two-thirds of the book is a treatment of natural resources. This begins with an interesting chapter which accepts spatial characteristics (including size, shape, depth, etc.) as one of the three broad categories of natural resources. The second category is agriculture, and the third is resources of energy and material. Under the third category there is a full chapter on atomic energy, alongside others on the fuel minerals, electric power, and the non-fuel minerals.

The final third of the book is given to much briefer discussions of capital and human resources and to a concluding section entitled "Strategy of Security." Here the concept of "geopolitics" is reviewed at some length. Mouzon finds that "its principal contribution has been understanding of global political relations. Its principal weakness has been an overemphasis of spatial relations to the neglect of other contributing factors to productivity, strength, and security." He calls for "a complete science of the study and application of those factors," and he suggests for it the name of geo*eco*politics.

Though the author obviously has striven hard to bring some order and unity to the book as a whole, the task has been made difficult by the mass of dynamic material with which he is working. The average economist is likely to find the book most interesting when read as a series of individual problem analyses. For each production resource, he will find some descriptive analysis, some discussion of key policy questions, and some conclusions of varying scope and firmness. The book is rich in maps and charts. There is a heavy use of material quoted or abstracted from the reports of study groups and public agencies.

The author aptly describes his method as a "dynamic functional analysis of resources." The method requires him to keep abreast of current developments across a vast field of subject matter. This seemingly leaves little time for concentration upon smooth and systematic composition. The result is not a polished treatment of the economic world which existed 25 years ago. It is a rather unpolished treatment of the economic world today.

This book could not have been written without some courage, energy, and originality. It should be helpful and stimulating to economists as we strive to bring our science into focus with the real facts of life.

McDONALD K. HORNE, JR.
National Cotton Council of America

Foreign Aid Reexamined. Edited by James M. Wiggins and Helmut Schoeck. Washington, D. C.: Public Affairs Press, 1958. Pp. 245. $5.00.

This book consists of fourteen papers presented during a symposium conducted under the auspices of the Department of Sociology and Anthropology of Emory University. Editor Wiggins wisely notes that the social and behavioral scientists represented in the work "claim no special competence in deciding whether foreign aid is good or bad by virtue of their professional training and experience."

Reading this book is like reading an issue of the *Congressional Record* containing the views of those opposed to United States aid programs. In general the essays are critical and the writers' opinions range from George Peter Murdock's denunciation (in "Byzantine Conquest of the United States") of the "herd-minded 'liberals' (who) dominate our intellectual circles today, and exert a powerful influence in Washington" . . . and who "are puzzled by our country's prosperity and ashamed of it," to what must be a new high in the development of the conventional wisdom by Wilson Schmidt. For the latter employs the comparative statics of marginal analysis (in "Social Overhead Mythology") to argue that the "social overhead thesis provides flimsy support for aid" and, incidentally, to rationalize ignorance on the part of governments of underdeveloped countries.

In contrast, Professor Gottfried Haberler's essay ("The Case for Minimum Interventionism") begins with the statement that "The problem of economic development far transcends the competence of any one discipline," and then argues that "the industrial development in the nineteenth century was made possible only by the rise of free enterprise." He concludes with a resounding criticism of Gunnar Myrdal's current views of the problem.

Myrdal, it may be remarked, seems to be the favorite whipping boy of a number of the writers represented in this volume. Thus Fred J. Rippy ("Historical Perspective") identifies Myrdal as

one of those "who have little regard for private enterprise so long as they are well paid for undertaking" the distribution of foreign aid funds, while Helmut Schoeck ("The Envy Barrier") accuses Myrdal of encouraging politicians in poor countries "to fan blind nationalism as an instrument of economic blackmail" and cites Nasser as a case in point.

Warren Thompson's "The Population Barrier" presents an interesting and thoughtful appraisal of the outlook for population control in the next two or three decades, while Justus M. van der Kroef ("Indonesia: Centrifugal Economies") has written a scholarly and knowledgeable essay which suggests that "regionalism" may be desirable economically no less than politically in some underdeveloped countries. Space precludes comment on the essays by Elgin Groseclose, William S. Stokes, P. T. Bauer, Alfred G. Smith, H. G. Barnett, and David Nelson Rowe.

This book ought to be read by all who are currently engaged in the study of economic development, if for no other reason, than to learn that there is another side and what it is saying. For, even in those essays in which the writers have indulged in rather long winded statements of their personal opinions regarding "liberals" and international civil servants, there are points which require further consideration and analysis. Thus Murdock also raises the question of how it is possible to "channel any substantial portion (of aid) to those disadvantaged but powerless groups whose plight has aroused our sympathy" when it "must be delivered into the hands of those who hold the reins of power in the country in question," and who use it to maintain the status quo. An answer from the supporters of aid programs is long overdue.

H. H. LIEBHAFSKY

University of Texas

North Carolina—An Economic and Social Profile. S. Huntington Hobbs. Chapel Hill, N. C.: University of North Carolina Press, 1958. Pp. xvii, 380. $6.00.

Without doubt one of the most influential forces in the economic and social development of North Carolina has been the wealth of information made available through the *North Carolina News Letter* of which Professor Hobbs was editor for thirty-four years. This "Economic and Social Profile" is the second of two volumes which were developed in part out of material assembled and published in the *News Letter* over more than a third of a century. The first, *North Carolina: Economic and Social*, which came out in 1930, was the first book of its kind to be published in the United States. A somewhat similar volume was promised at that time. The *Profile* is in fulfillment of that promise.

There are thirty chapters in the book which, although not so designated, fall naturally into five divisions. The volume is well illustrated (19 figures) and amply fortified by tabular material (124 tables). There are *eight* chapters dealing with the State's natural and human resources; *seven* with agriculture and industry; *three* with transportation; *three* with income, wealth and financial institutions; and *nine* with government, education, health and welfare.

Not only do these chapters (and the related tables which occupy the last 100 pages of the text) present a clear and comprehensive picture of the current situation and past trends but the author provides a thoroughly capable analysis of the underlying forces and their probable effects upon future trends. Prof. Hobbs does not minimize the difficulty of the State's problems. At one point, for example, after calling attention to the problems associated with small size farms, he makes this observation: "Apparently we have in this an irremediable situation. Suppose the 100,000 smallest farmers of the state moved to town or in some way disappeared. Suppose the land that they now cultivate were taken over by the remaining farms. The cultivated acreage of the 170,000 remaining farmers would increase by only six or seven acres. North Carolina would still rank near the bottom in size of farms.... If the premise that larger farms are necessary for better income and better living is accepted, then the possibility of achieving these larger farms seems rather remote."

It is hard for this reviewer to find fault with Professor Hobbs' *Economic and Social Profile* but, as a loyal South Carolinian, he cannot accept the statements that "The textile industry had its beginning in North Carolina in 1813" and that "the first five cotton mills built in the South were on North Carolina soil." There is on record a letter written in 1777 by Daniel Heyward to his son Thomas (then serving as a South Carolina delegate to the Continental Congress) in which he says: "My manufactory goes on bravely but I fear the want of cards will put

a stop to it as they are not to be got; if they were, there is not the least doubt but that we could make six thousand yards of cloth in the year."

Professor Hobbs' book is unquestionably outstanding as a statistical reference to North Carolina's economic and social development and it makes interesting reading but is not recommended as a source book for unfavorable historical comparisons involving her sister state to the south!

G. H. AULL

Clemson College

The Labor Force under Changing Income and Employment. By Clarence D. Long. Princeton, N. J.: Princeton University Press, 1958. Pp. xxiv, 440. $10.00.

This volume, number 65 in the General Series of the National Bureau of Economic Research, is a meticulous investigation of labor force participation in an endeavor to find some unified explanation of its extent and nature in view of the multifarious reasons which may influence the individual in his decisions to work. The variables are so numerous that one is reminded of Max Planck's reported reason for abandoning the field of economics for that of quantum physics. And while the riches of demographic statistical material available make possible separate examination of the labor force by age, sex, color, family situation, education and a dozen other factors and also allow comparisons over time and between countries, they add to the magnitude of the task.

In his first chapter, Professor Long states his basic questions, asking whether labor force participation has been influenced by changes in income and employment, whether these two influences are powerful enough to stand out over other possibilities, whether any one other possibility furnishes a fairly complete explanation of labor force behavior or whether it must be sought in some combination of social, demographic and economic forces. And he gallantly satisfies the reader's curiosity, at least in part, by summarizing his conclusions in the same chapter. His first major conclusion is that under comparatively static conditions there tends to be an inverse relationship between income and total labor force participation rate, with rather large changes in the former required to bring about moderate changes in the latter. The probability is that the labor force is affected by severe depressions, but again, a very large increase in unemployment is required to cause a small net decrease in the participation rate.

The total participation rate has remained stable for the whole working-age population but there have been changes in the composition of the labor force. While participation has declined for young and older males, as might be expected on a long time income-increase trend, it has risen for females and declined for Negroes and the foreign-born. The last-named trend is attributed to the minority groups tending to conform to the pattern of the dominant native whites. The increase in labor force participation of women appears to have resulted from three main forces. There has been considerable reduction in the average work-week, house-keeping and child-care responsibilities of women have decreased, while their education has improved, both absolutely and relative to older men; on the demand side there has been growing need for clerical and service labor.

So much for the major conclusions which the author says give but incomplete, hesitant and speculative answers to the basic questions of investigation. No brief review can do justice to the wealth of material covered in the thirteen chapters and six appendixes of the volume. The material is drawn from the censuses of the United States and four other countries and, in some cases, covers a space of a century or more. It is treated with great care and skill and the results meet the highest standards of empirical investigation of hypotheses by providing well-based estimates of probabilities, questions relevant to further study and ideas about the form in which statistics will be needed and should be collected.

GLADYS BOONE

Sweet Briar College

The American Labor Force: Its Growth and Changing Composition. By Gertrude Bancroft. New York: John Wiley & Sons, 1958. Pp. vii, 256. $7.50.

This is another volume in the Census Monograph Series and its title is a neat description of the book's contents. The title does not, however, suggest the wealth of information to be found there. After an introductory presentation of the concept of "the" labor force and a discussion of the factors making it desirable to put quotes

around the "the," the author sketches broadly the labor force changes which have occurred over the sixty-five year interval from 1890 to 1955. Then follows a more detailed examination of the decade bounded by the Census years, 1940 and 1950: a period full of disturbing surprises for observers of long-established trends of population and labor force phenomena. From this point, the analysis shifts to the trends in age, sex, race, industry, and occupation of the part-time labor force, 1940–1955, and from here proceeds to family employment patterns for the same interval. The final portion of the text presents some labor force projections based upon different assumptions as to the appropriate participation rates. There are fifty pages of appendices discussing conceptual, adjustment, and measurement problems associated with Census data and fifty additional pages containing tables of selected Census data.

I find this an impressive piece of work. Miss Bancroft has dealt effectively with a massive amount of Census material; she has condensed it and arranged it in a systematic and meaningful form. It is clear from the way she uses one portion of her data to increase the significance of another that she is securely in control of the mass rather than immersed in it. There are ninety-six tables and nineteen charts in the 145 pages of text alone, yet I did not get the feeling of being overwhelmed by factual information. Finally, I felt that the author used good judgement, generally speaking, in deciding when to comment upon the significance of the data, to suggest interrelationships and explanations, and when to settle for descriptive statements alone.

This book should be a valuable resource for a wide range of economists—especially those with interests in labor, theory, economic growth and development, and population problems.

ROBERT L. BUNTING
University of North Carolina

The New Economy of China: Factual Account, Analysis and Interpretation. By Gyan Chand. Bombay, India: Vora & Co., 1958. Pp. xiv, 429. Rs. 16/—.

As its title suggests, this book attempts to describe, analyze and interpret the development of what the author terms "The New Economy of China."

It seems to the present reviewer that the material that the author presents concerning the development of the new economy of China is based upon one-sided information designed primarily for propaganda purposes without objective basis and without the consideration of essential facts. This one-sided approach is evidenced by numerous examples contained in this book, some of which follow.

According to the author, "the Communist Regime brought to the people an ardent promise that new regime would work for the welfare and betterment of the masses and their economic and social emancipation in a spirit of complete devotion and dedication."[1] But according to the knowledge of the present reviewer, the Red Regime has broken numerous promises to its people from the time of its occupation of the China mainland up to the present time. One of these promises was the well known event of the "hundred flowers" campaign announced in the beginning of 1957, a policy of "let a hundred flowers bloom . . . let a hundred schools of thought contend." The flowers were intended to be ideas, the schools of thought, different approaches in science and technology. The ideas did blossom, but practically all against communism. The Red Regime reacted by shutting off the "hundred flowers" garden in six weeks, rounding up a great number of students, extracting the usual abject confessions and pledges of mind reform, sending many to slave labor camps.[2] This policy of "let a hundred flowers bloom" is briefly quoted in the footnote on page 406 of the book, but Mao Tse-tung's measures to punish those joining the six week-life campaign are entirely omitted.

Another example of the broken promises was the first official declaration of the Red Regime containing ten promises, one of which was the protection of the properties and lives of the people. But in enforcing the land reform, the properties of the people were confiscated without compensation,[3] and in carrying out the confiscation program, wanton assaults and wholesale murders were resorted to without the least qualms; and even those victims who happened to survive such treatments were to leave their premises empty-handed; "being kicked out of doors after sweeping the floor" was the popular

[1] Text, p. 5, 1st par.

[2] Edward Hunter, *The Blackbook on Red China* (New York: The Bookmail, 1958), pp. 26, 28, 30, 89, 97, 103.

[3] Text, p. 73.

description of their fate. The British estimate of the people shot by the Communists in Red China runs from 800,000 to 1,500,000, but the American figures on liquidations are as high as 20 millions. The Nationalist figures are much higher. Whatever the figure, it is one of the most appalling records of cold-blooded liquidations in history.[4] The author briefly describes public accusation meetings[5] and detention camps[6] in terms of the class struggle;[7] however, he does not explain that these meetings, camps and the class struggle were used as a means of class liquidation through wanton assaults and wholesale murders directed against the landlords.

Another illustration of the one-sided approach by the author of this book is found in his discussion regarding the origin of land reform. The author interprets the land reform as having originated in the demands of the people. He states that "democratic estimation and decision of the peasants made the land reform peoples' movement."[8] But in fact, the Red Regime imposed upon its people the land reform without considering their will and interest. This imposition of the land reform upon the people contrary to their wishes is indicated by Li Fu-chin, Chairman of the Planning Committee of the Red Regime, in his Report that "either the path of capitalism or that of socialism can be taken, but the Chinese people will never allow the path of socialism to be taken."[9]

As this book points out, the land reform was the only alternative for achieving democratization, industrialization and prosperity.[10] But in fact, after the operation of the land reform, there was so much widespread dissatisfaction in Red China over the land reform that the Red Regime was forced to adopt a second ambitious attempt, collectivization of agriculture, in order to rectify its land policy. Even with the implementation of the collective farming, the Red Regime found more difficulties and wide dissatisfaction. The author in typical fashion presents the significance of the collectivization in terms of Communist theory,[11] but he neglects to describe the collectivization program in terms of its reality, such as impracticable application of the program and wide dissatisfaction and resistance of the people concerned.

Further proof of Communist selfish imposition of reforms primarily from the standpoint of impracticable theory rather than the needs and welfare of the people concerned can be seen in the most recent attempt, the commune system. The author does not mention it for it had not been applied in Red China before the time of his writing, but nevertheless it illustrates an important fact showing the major weakness of the new economy of China, mainly that the impracticable solutions to the problems are artificial, despotic, and a product of the shifting and opportunistic selfishness of dialectic materialism of the party bosses solely. It brought forth messages from Communist party branches and other groups within four months from all over the mainland urging the abolition of the commune system, the restoration of family life and the granting of land to farmers to till for themselves. Because of this, the Communist Party Central Committee in urgent session decided to slow down the enforcement of the commune system and to approve Mao Tse-tung's decision to withdraw from re-election as government chairman when the People's Congress opens in Peiping some time in April of this year. All these prove that what the author describes, analyzes and interprets is based on Communist plans on paper without using essential facts.

In addition, the author states that one of the objectives of Communist reforms is to create a classless society free of the evils in a capitalist society.[12] But he overlooks the fact that the American society has been almost wholly classless: the rich, the middle income groups and the poor come closer to living alike, dressing alike, eating the same food, enjoying the same entertainments and sharing the same advantages. He also fails to realize that the accepted goal of American society is to raise up the lower income groups and abolish poverty, making all the people free and happy. This is a great contrast to the Communist type of classless society which has as its goal the policy to depress and degrade the upper class and abolish well-being, freedom and dignity for all, thus making the people all equally miserable.

[4] *Reader's Digest*, January 1959, pp. 34–35.
[5] Text, p. 67.
[6] Text, p. 68.
[7] Text, p. 69.
[8] Text, p. 73.
[9] Text, 128, 2nd par.
[10] Text, pp. 75–76.
[11] Text, p. 410.
[12] Text, p. 147.

Finally, the author interprets democracy only in terms of the people's democratic dictatorship, e.g., people's democracy equals people's democratic dictatorship.[13] But in fact, his interpretation of democracy contradicts itself with the facts when it becomes a form of stabilized shooting of the people, by the people, and for the people, as evidenced by the factual figures on liquidations, previously described. Moreover, in Red China's people's democracy, freedom is denied, expressions of opinions against the government or the Communist party are not tolerated, free press is forbidden, etc., also previously described.[14]

CHAU YAU-PIK

University of Chattanooga

[13] Text, pp. 238, 390, 396.

[14] Text, pp. 407–408.

NOTES

ANNOUNCEMENT

The twenty-ninth annual conference of the Southern Economic Association will be held on November 20 and 21, 1959, at the Hotel Robert Meyer, Jacksonville, Florida.

DEATH

Lyle E. Campbell, professor of accounting at the Emory University School of Business Administration for 31 years, died on March 5, 1959.

APPOINTMENTS, PROMOTIONS AND RESIGNATIONS

Ray Allen has been appointed assistant professor of business administration at Howard College.

Ruth A. Allen, a member of the faculty of the Department of Economics at the University of Texas since 1923, retired from her position as professor of economics at the end of the 1958 academic year.

George H. Aull, head, Department of Agricultural Economics and Rural Sociology, Clemson College, was a delegate March 19–22 at the Duke University American Assembly to discuss National Monetary Policy. He has also been appointed by the Governor as a member of the South Carolina Tax Study Commission.

Frank T. Bachmura, assistant professor of economics at Vanderbilt University, resigned his position, effective February 1, 1959, in order to accept a Fulbright grant in Santiago, Chile.

Arnold L. Barrett, of the School of Commerce and Business Administration, University of Alabama, has been appointed Alabama correspondent for the *Southern Economic Journal* by the Southern Economic Association.

Carlisle W. Baskin, chairman of the Department of Economics at Randolph-Macon College, is a member of the Ford Fellowship Seminar on Public Finance and Fiscal Policy being held at Princeton University during June 22 to August 14.

L. M. Bauknight, associate professor of agricultural economics, Clemson College, participated in a National Defense Resources Conference conducted by the Industrial College of the Armed Forces at Chattanooga, Tennessee, March 16–27.

Claude A. Bitner, Jr., of Michigan State University, has been appointed assistant professor of economics at Texas A. and M. College, effective September 1, 1959.

Rudolph Blitz, assistant professor of economics at Vanderbilt University, will be on leave of absence for the spring semester 1960 in order to accept a research appointment at Johns Hopkins University.

Richard S. Bower, of Cornell University, has accepted an appointment as assistant professor of economics and business administration at Vanderbilt University, effective September 1959.

John A. Brittain, of Cornell University, has accepted an appointment as assistant professor of economics at Vanderbilt University, effective September 1959.

Horace Brock, on leave from North Texas State College, spent the 1958–1959 academic year teaching at Ohio State University.

Norman F. Byers, of Northwestern University, has been appointed assistant professor of economics at the University of Houston.

W. C. Chevaillier has been promoted to assistant professor of economics at Arkansas Polytechnic College.

Virgil Christian, associate professor of statistics, University of Kentucky, will attend the Institute in Statistics, sponsored by the National Science Foundation, at Laramie, Wyo., summer, 1959.

David C. Cole, assistant professor of economics and assistant director of the Graduate Program in Economic Development at Vanderbilt University, has been assigned to the University of the Philippines for the year beginning February 1960 under Vanderbilt University's new Overseas Professorship Program.

Marion K. Coley, formerly assistant dean of men, has been appointed associate professor of business law at the University of Alabama.

Robert T. Collins, of the Department of Economics and Business Administration, Alabama Polytechnic Institute, has been invited to attend the Forum on Business Fluctuations sponsored by the University of North Carolina during July and August.

Lawrence Conwill, former professor of business administration, Delta State College, has been appointed assistant professor of business administration at Florence State College.

Frank G. Coolsen, associate professor of marketing, University of Kentucky, has resigned to accept an appointment as professor of marketing at Texas Technological College. He will attend the University of Chicago seminar in Business Economics, Williams College, summer, 1959.

Caroline Currie, associate professor in the School of Business Administration, North Texas State College, resigned as of September 1, 1958.

M. Gordon Daniels, assistant professor of economics at Texas A. and M. College, has been appointed a Fulbright lecturer at Central University, Quito, Ecuador, for the period June 1, 1959, to February 1, 1960.

Z. S. Dickerson, Jr., former head of the Department of Business Administration, Florence State College, is now head of the Department of Business Education at Madison College.

Louis R. Dougherty has resigned from the Department of Business Administration at Troy State College.

Edgar O. Edwards, formerly associate professor of economics at Princeton University, has been appointed Reginald Henry Hargrove professor of economics at the Rice Institute, effective September 1, 1959.

Orville Elliott was appointed assistant professor of accounting at North Texas State College, effective September 1, 1958.

Clyde Erwin, from the University of Mississippi, has been appointed instructor in business administration and economics at Florence State College.

David I. Fand, formerly research economist with the Committee for Economic Development and presently visiting scholar at the Institute of Statistics, University of North Carolina, has been appointed associate professor of economics at Southern Methodist University, effective September 1, 1959.

James M. Folsom, formerly of Vanderbilt University, has been appointed instructor of economics at Duke University.

Isabelle French, formerly of the University of Texas, was appointed assistant professor of business writing at North Texas State College, effective September 1, 1958.

John N. Fry, associate professor of economics at the University of Houston, has been awarded a Ford Foundation Fellowship to attend the regional faculty research seminar on "The Theory of the Firm" at the University of California during the summer 1959.

Jack T. Guenther, of Harvard University, has accepted an appointment as assistant professor of economics at Vanderbilt University, effective September 1959.

George Robert Hall, formerly of Harvard University, has been appointed acting assistant professor of economics at the University of Virginia for the academic year 1959–1960.

George W. Harbeck, formerly of Louisiana Polytechnic Institute, has been appointed assistant professor of economics at Saint Louis University.

R. Murray Havens, head of the Department of Economics, is on leave from the University of Alabama to lecture under a Fulbright grant during the spring and summer terms, 1959, at University College, Dublin, Ireland.

William Warren Haynes, professor of economics, University of Kentucky, will attend the Carnegie Institute of Technology seminar in Business Administration, Denver University, summer, 1959.

James E. Hibdon, formerly associate professor of economics at the Georgia State College of Business Administration, has been appointed associate professor of economics at Texas A. and M. College, effective September 1, 1959.

Prosper N. Hill, formerly with Wagner and Company of Lancaster, Pennsylvania, joined the staff of the School of Business, Richmond Professional Institute, in September 1958.

Werner Z. Hirsch has been promoted to professor of economics at Washington University.

B. J. Hodge, formerly of Louisiana State University, has been appointed assistant professor of economics at the University of Houston.

Branston Beeson Holder retired from his position as associate professor of commerce and economics at Washington and Lee University in June 1959.

James James has been appointed lecturer in economics at Southern Methodist University.

Gaylord A. Jentz has joined the staff at the University of Oklahoma as instructor of business management.

Frederick C. Joerg, of the Department of Economics and Business Administration at Duke University, has received a Fulbright grant to lecture at the Helsinki School of Economics in Finland for the academic year 1959–1960.

Alexandre Kafka, of the United Nations and the University of Sao Paulo, has been appointed

acting associate professor of economics at the University of Virginia.

Thomas F. Keller, formerly of the School of Business Administration, University of Michigan, has been appointed assistant professor in the Department of Economics and Business Administration at Duke University.

Richard H. Leftwich, professor of economics at Oklahoma State University, has been awarded a Ford Foundation Faculty Research Fellowship for 1959–1960.

Howard T. Lewis, Jr., formerly associate professor of business management at Cornell University, has accepted a position of associate professor of business management and coordinator of Executive Development Programs, University of Oklahoma.

Stanley Todd Lowry has been appointed assistant professor of economics at Washington and Lee University, effective September 1959.

Wallace F. Lovejoy, formerly economic analyst for the Continental Oil Company in Houston, was appointed assistant professor of economics at Southern Methodist University, effective February 1, 1959.

Leta McIntyre, of the Department of Business and Economics of Flora Macdonald College, participated in the Workshop in Education in Family Finance at the University of Georgia during the summer of 1958.

Joseph P. McKenna, professor of economics at Saint Louis University, has been elected a member of the board of editors of the *Southern Economic Journal* by the Southern Economic Association.

James W. McKie, associate professor of economics at Vanderbilt University, has been elected a member of the board of editors of the *Southern Economic Journal* by the Southern Economic Association. He will be on leave of absence for the year beginning September 1959 in order to serve as visiting associate professor of economics at Harvard University.

Peter F. McLoughlin, of the University of Texas, has accepted an appointment as lecturer in economics at the University of Khartoum, Republic of Sudan.

Suzanne McWhorter, formerly of Texas Technological College, was appointed assistant professor of marketing at North Texas State College, effective September 1, 1958.

George Macesch, of the U. S. Chamber of Commerce, has been appointed assistant professor of economics at Florida State University.

L. D. Malphrus, associate agricultural economist, Clemson College, participated in a National Defense Resources Conference conducted by the Industrial College of the Armed Forces at Chattanooga, Tennessee, March 16–27.

Lawrence Mansfield has resigned as assistant professor of economics at Florida State University.

Allan B. Mandelstamm, of Northwestern University, has accepted an appointment as assistant professor of economics at Vanderbilt University, effective September 1959.

Inez Martin, of Little Rock University, was elected president of Arkansas College Teachers of Economics and Business at its December 1958 annual meeting.

Michael H. Mescon, associate professor of management at Georgia State College of Business Administration, has resigned to accept a position with Rich's of Atlanta.

Raymond Miles was appointed instructor in management at North Texas State College, effective September 1, 1958.

B. O. Miller is acting head of the Department of Business Administration at Virginia Polytechnic Institute.

J. G. Mitchell, instructor in the School of Business Administration, North Texas State College, resigned, effective June 1, 1958.

Donald F. Mulvihill, of the University of Alabama, has been appointed coordinator of the Alabama Business Research Council.

Richard F. Muth, visiting associate professor of economics at Vanderbilt University, will be permanently joining the faculty of the School of Business at the University of Chicago as associate professor of urban economics for the year beginning June 1959.

Paul W. Paustian has been appointed acting director of the Bureau of Business Research and acting head of the Department of Economics at the University of Alabama.

Frederick W. Parkhurst, Jr., formerly of Northeastern University, has been since January 1958 assistant professor of and head of the Department of Economics at Emory and Henry College.

Floyd Peavler was appointed instructor in accounting at North Texas State College, effective September 1, 1958.

I. James Pikl, Jr., formerly instructor in economics at Vanderbilt University, was appointed assistant professor of economics at Southern Methodist University, effective September 1, 1958.

Murray E. Polakoff, associate professor of economics at the University of Texas, has been appointed visiting associate professor of economics at the University of California at Los Angeles for the 1959 summer session.

Lorenzo T. Reeves, Jr., formerly of the University of Alabama, is professor and head of the Department of Economics and Business Administration at Howard College.

W. David Robbins, of the Harvard Graduate School of Business Administration, has been appointed dean of the University of Richmond School of Business Administration, effective July 1, 1959.

M. C. Rochester, leader, Extension Economics at Clemson College, conducted an Agricultural Economics and Farm Management Short Course for county extension workers at Clemson College, March 23–27.

Frank Ross, assistant professor in the School of Business Administration, North Texas State College, resigned in July, 1958, to accept a position at York College.

Richard Lamar Rowan, part-time instructor in economics at the University of North Carolina, has been awarded an H. B. Earhart senior fellowship for the year 1959–1960.

Alek A. Rozental has been promoted to associate professor of economics at Saint Louis University.

G. T. Schwenning, professor of business administration at the University of North Carolina since 1926, retired from teaching at that institution in June. He will continue to serve as managing editor of the *Southern Economic Journal*. He has been appointed visiting lecturer at Duke University for the 1959–1960 academic year.

Warren Samuels, formerly of Georgia State College of Business Administration, has been appointed assistant professor of economics at the University of Miami School of Business Administration, effective September 1, 1959.

Louis H. Schuster, formerly head of the Department of Business Administration at Virginia State College, has been appointed director of the Division of Business, Tennessee Agricultural and Industrial State University.

Richard T. Selden, associate professor of economics at Vanderbilt University, has resigned to accept a position as associate professor of banking in the Graduate School of Business, Columbia University, effective September 1959.

James Serur was appointed instructor in insurance at North Texas State College, effective September 1, 1958.

Maria Smith has been appointed instructor in economics at Huntingdon College.

Robert S. Smith, of the Department of Economics at Duke University, has received a Ford Faculty Research Grant and will be on leave for the year 1959–1960.

Irvin Sobel has been promoted to professor of economics at Washington University.

Roy Stevens is acting as head of the Department of Business Administration at Florence State College.

Herman A. Stribling, Jr., formerly chief accountant, has been appointed temporary instructor in economics at the University of Alabama.

George W. Stocking, professor of economics at Vanderbilt University, is on leave of absence for the year beginning February 1, 1959 as a Ford Foundation research professor.

Anthony M. Tang, assistant professor of economics at Vanderbilt University, has been assigned to the Institute of Social and Economic Research, Osaka University, Osaka, Japan for the year beginning September 1959 under Vanderbilt University's new Overseas Professorship Program.

Jack Edward Thornton, part-time instructor in insurance at the School of Business Administration, University of North Carolina, has been appointed Julian Price fellow in insurance.

James C. Vadakin, professor of economics at the University of Miami, has been appointed Florida correspondent for the *Southern Economic Journal* by the Southern Economic Association.

Dimiter E. Wassen has been appointed chairman of the Division of Economics and Business Administration at Pfeiffer College.

William V. Wilmont, Jr., who has been a member of the staff of the College of Business Administration, University of Florida, has been appointed associate professor of management and

head of the Department of Management at that institution.

Martin D. Woodin, professor and head of the Department of Agricultural Economics at Louisiana State University since 1957, has been named director of resident instruction in the College of Agriculture at that institution.

NEW MEMBERS

The following names have been added to the membership of the Southern Economic Association:

Herman P. Thomas, University of Richmond, Richmond, Va.

Sam Skogstad, Florida State University, Tallahassee, Fla.

Littleton W. Simpson, 11-L Copeley Hill, Charlottesville, Va.

William H. Sager, 4714 West Grace Street, Richmond, Va.

Samuel M. Rosenblatt, Randolph-Macon Womens College, Lynchburg, Va.

R. Rollin, Alabama Polytechnic Institute, Auburn, Ala.

Armand L. Perrault, McNeese State College, Lake Charles, La.

G. Warren Nutter, University of Virginia, Charlottesville, Va.

Clarence C. Morrison, 191 DuPont Circle, Norfolk, Va.

Alexander H. Morrison, Virginia Military Institute, Lexington, Va.

Mack A. Moore, University of Tennessee, Knoxville, Tenn.

William L. Miller, 460 Pinedale Drive, Auburn, Ala.

E. Kidd Lockard, Box 8411, Guilford College, N. C.

E. E. Liebhafsky, Texas A. and M. College, College Station, Tex.

William E. Laird, Jr., University of Virginia, Charlottesville, Va.

Frank Kalmbach, McNeese State College, Lake Charles, La.

Watts Hill, Jr., P. O. Box 931, Durham, N. C.

C. Chen Henry, University of Houston, Houston, Tex.

Tyler F. Haygood, University of Louisville, Louisville, Ky.

George M. Grabryan, 4605 South 6 Street, Louisville, Ky.

Robert L. Froemke, Florida State University, Tallahassee, Fla.

J. M. Folsom, Vanderbilt University, Nashville, Tenn.

Jesse C. Fisher, Jr., University of North Carolina, Chapel Hill, N. C.

W. D. Durland, 1303 A Eaton Place, High Point, N. C.

Floyd Durham, Box 2284, Boulevard Station, Norman, Okla.

L. Aubrey Drewry, Jr., Queens College, Charlotte, N. C.

J. Stuart Devlin, Jr., Box 8404, Guilford College, N. C.

John M. Dale, Southwest Research Institute, Kansas City, Mo.

Clayton C. Curtis, University of Florida, Gainesville, Fla.

W. P. Carton, 4501 N. Charles Street, Baltimore, Md.

P. V. Bowman, Zetz Seven-up Bottling Co., New Orleans, La.

Robert T. Averitt, Box 7669, University Station, Austin 12, Tex.

William R. Allen, University of California, Los Angeles, Calif.

John H. Allen, 325 Genelda Avenue, Auburn, Ala.

BOOKS RECEIVED

Abramovitz, Moses and others. *The Allocation of Economic Resources: Essays in Honor of Bernard Francis Haley*. Stanford, Cal.: Stanford University Press, 1959. Pp. 244. $5.00.

Allen, Clark Lee and others. *Prices, Income, and Public Policy*. 2nd ed. New York: McGraw-Hill Book Company, 1959. Pp. x, 501. $6.50.

Anderson, Thomas J. and others. *General Economics: A Book of Readings*. Homewood, Ill.: Richard D. Irwin, 1959. Pp. xiv, 489. Paper, $3.50.

Baughn, William Hubert. *Changes in the Structure of Texas Commercial Banking, 1946–1956*. Austin, Tex.: Bureau of Business Research, University of Texas, 1959. Pp. 143. Paper, $3.00.

Beal, Edwin F. and Wickersham, Edward D. *The Practice of Collective Bargaining*. Homewood, Ill.: Richard D. Irwin, 1959. Pp. xvii, 738. $7.25.

Blaine, J. C. D. *Enplaned Airline Passenger, Mail, and Cargo Traffic of the South, 1949 to 1957 with Projections to 1960*. Chapel Hill: School of Business Administration, University of North Carolina, 1958. Pp. vii, 59.

Bowman, Edward H. and Fetter, Robert B. (eds.). *Analyses of Industrial Operations*. Homewood, Ill.: Richard D. Irwin, 1959. Pp. viii, 485. $7.95.

Bruun, Per and De Grove, John M. *Bayfill and Bulkhead Line Problems—Engineering and Management Considerations*. Gainesville, Fla.: Public Administration Clearing Service, University of Florida, 1959. Pp. v, 36. Paper, $1.00.

The Budget and Economic Growth. New York: Committee for Economic Development, 1959. Pp. 44. Paper, 50¢.

Directory of Texas Manufacturers, 1959. Austin, Tex.: Bureau of Business Research, University of Texas, 1959. Pp. xi, 515. Paper, $10.00.

Cartter, Allan M. *Theory of Wages and Employment*. Homewood, Ill.: Richard D. Irwin, 1959. Pp. xii, 193. $5.00.

Chalfant, William B. *Primer of Free Government*. New York: Philosophical Library, 1959. Pp. 160. $3.00.

Chapman, James E. and Wells, William H. *Factors in Industrial Location in Atlanta, 1946–55*. Atlanta, Ga.: Bureau of Business and Economic Research, Georgia State College of Business Administration, 1958. Pp. 29.

Charting the Company Organization Structure. New York: National Industrial Conference Board, 1959. Pp. 60. Paper, $3.00.

Clough, Shepard B. *The Economic Development of Western Civilization*. New York: McGraw-Hill Book Company, 1959. Pp. xv, 540. $7.50.

Converse, Paul D. *The Beginning of Marketing Thought in the United States: With Reminiscences of Some of the Pioneer Marketing Scholars*. Austin Tex.: Bureau of Business Research, University of Texas, 1959. Pp. viii, 89. Paper, $1.50.

Cox, Oliver C. *Foundations of Capitalism*. New York: Philosophical Library, 1959. Pp. 500. $7.50.

Craig, David S. and Howell, Rate A. *Basic Business Law: Text and Cases*. New York: Ronald Press Company, 1959. Pp. viii, 912. $7.50.

Davey, Harold W. and others (eds.). *New Dimensions in Collective Bargaining*. New York: Harper & Brothers, 1959. Pp. viii, 203. $3.50.

Davis, Thomas Jeff. *Cycles and Trends in Textiles*. Washington, D. C.: U. S. Department of Commerce, 1958. Pp. iv, 63. Paper, 40¢.

Dickerson, O. D. *Health Insurance*. Homewood, Ill.: Richard D. Irwin, 1959. Pp. xvi, 500. $6.00.

Drucker, Peter F. *Landmarks of Tomorrow*. New York: Harper & Brothers, 1959. Pp. xii, 270. $3.25.

Due, John F. *Government Finance: An Economic Analysis*. Rev. ed. Homewood, Ill.: Richard D. Irwin, 1959. Pp. xxi, 627. $6.95.

Dunlop, John. *Industrial Relations Systems*. New York: Henry Holt and Company, 1959. Pp. xiii, 399. $5.75.

Eckstein, Otto. *Trends in Public Expenditures in the Next Decade*. New York: Committee

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Ethe, Solomon and Pegram, Roger M. *Corporate Directorship Practices*. New York: National Industrial Conference Board, 1959. Pp. 92. Paper, $3.50.

Fein, Rashi. *Economics of Mental Illness*. New York: Basic Books, 1959. Pp. xx, 164. $3.00.

Galenson, Walter (ed.). *Labor and Economic Development*. New York: John Wiley & Sons, 1959. Pp. xiii, 304. $6.75.

Gross, Alfred. *Salesmanship: Principles and Practices of Professional Selling*. New York: Ronald Press Company, 1959. Pp. viii, 580. $7.00.

Haring, Albert and Yoder, Wallace O. (eds.). *Trading Stamp Practice and Pricing Policy*. Bloomington, Ind.: Bureau of Business Research, Indiana University, 1958. Pp. xxi, 390. $6.00.

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Hoover, Calvin B. *The Economy, Liberty and the State*. New York: Twentieth Century Fund, 1959. Pp. 445. $5.00.

International Labour Conference. *Report of the Director-General. Part I: Current Problems and Trends*. Geneva: International Labour Office, 1959. Pp. 132. Paper, $1.00.

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Kernodle, R. Wayne (ed.). *The Sixth Decade of Our Century: The Developing Fabric of American Society*. Williamsburg, Va.: The College of William and Mary, 1959. Pp. 79.

Kimmel, Lewis H. *Federal Budget and Fiscal Policy, 1789–1958*. Washington, D. C.: Brookings Institute, 1959. Pp. x, 337. $5.00.

Klaman, Saul B. *The Postwar Rise of Mortgage Companies*. New York: National Bureau of Economic Research, 1959. Pp. xv, 102. Paper, $1.50.

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Kirkpatrick, C. A. *Instructor's Manual for Advertising: Mass Communication in Marketing*. Boston, Mass.: Houghton Mifflin Company, 1959. Pp. 139. Paper, $1.50.

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Markham, Jesse W. *The Fertilizer Industry: Study of an Imperfect Market*. Nashville, Tenn.: Vanderbilt University Press, 1958. Pp. 249. $6.00.

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N. J.: Princeton University Press, 1959. Pp. xxvi, 591. $12.00

Morris, James O. *Conflict Within the AFL: A Study of Craft Versus Industrial Unionism, 1901–1938*. New York: New York State School of Industrial & Labor Relations, Cornell University, 1958. Pp. xi, 319. $5.00.

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Pegrum, Dudley F. *Public Regulation of Business*. Homewood, Ill.: Richard D. Irwin, 1959. Pp. xviii, 732. $7.50.

Rayback, Joseph G. *A History of American Labor*. New York: Macmillan Company, 1959. Pp. vi, 459. $6.00.

Rockefeller Brothers Fund. *The Challenge to America: Its Economic and Social Aspects*. New York: Doubleday & Company, 1958. Pp. viii, 78. Paper, 75¢.

Schott, Francis H. *The Evolution of Latin American Exchange-Rate Policies Since World War II*. Princeton, N. J.: International Finance Section, Princeton University, 1959. Pp. 28.

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Solo, Robert A. *Synthetic Rubber: A Case in Technological Development Under Government Direction*. Washington, D. C.: Government Printing Office, 1959. Pp. 130. Paper, 35¢.

Spencer, Milton H. and Siegelman, Louis. *Managerial Economics: Decision Making and Forward Planning*. Homewood, Ill.: Richard D. Irwin, 1959. Pp. xiv, 454. $6.75.

Strassmann, W. Paul. *Risk and Technological Innovation: American Manufacturing Methods during the Nineteenth Century*. Ithaca, N. Y.: Cornell University Press, 1959. Pp. x, 249. $4.00.

Ulmer, Melville J. *Economics: Theory and Practice*. Boston, Mass.: Houghton Mifflin Company, 1959. Pp. xv, 638. $6.95.

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Vadakin, James C. *Family Allowances: An Analysis of Their Development and Implications*. Coral Gables, Fla.: University of Miami Press, 1958. Pp. xiii, 185. $4.95.

Venning, Martha L. (ed.). *Economic Almanac of Southeastern Florida*. Coral Gables, Fla.: Bureau of Business and Economic Research, University of Miami, 1959. Pp. 65. Paper, $4.00.

Vernon, Raymond. *The Changing Economic Function of the Central City*. New York: Committee for Economic Development, 1959. Pp. 92. Paper, $1.00.

Villard, Henry H. *Economic Development*. New York: Rinehart & Company, 1959. Pp. xiv, 229. Paper, $2.50.

Weimer, Arthur M. *Introduction to Business: A Management Approach*. Homewood, Ill.: Richard D. Irwin, 1959. Pp. xiv, 566. $6.50.

Wessel, Robert H. and Willett, Edward R. *Statistics as Applied to Economics and Business*. New York: Henry Holt and Company, 1959. Pp. xii, 321. $5.00.

Williams, C., Jr. *Price Discrimination in Property and Liability Insurance*. Minneapolis, Minn.: University of Minnesota, 1959. Pp. vi, 100. Paper, $2.50.

Williams, Ernest W., Jr. *Freight Transportation in the Soviet Union: A Comparison with the United States*. New York: National Bureau of Economic Research, 1959. Pp. ix, 38. Paper, 75¢.

Wood, Robert C. *Metropolis Against Itself*. New York: Committee for Economic Development, 1959. Pp. 56. Paper, $1.00.

Worrell, Albert C. *Economics of American Forestry*. New York: John Wiley & Sons, 1959. Pp. x, 441. $9.75.

Year Book of Labour Statistics, 1958. Washington, D. C.: International Labour Office, 1958. Pp. xvi, 627. Paper, $5.00.

Youngson, A. J. *Possibilities of Economic Progress*. New York: Cambridge University Press, 1959. Pp. x, 325. $6.00.

Zinke, George W. *The American Economy: An Introductory Analysis*. New York: Ronald Press Company, 1959. Pp. xvi, 704. $6.75.

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